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CATALOGUE OF THE

TREES & SHRUBS

AT WESTONBIRT

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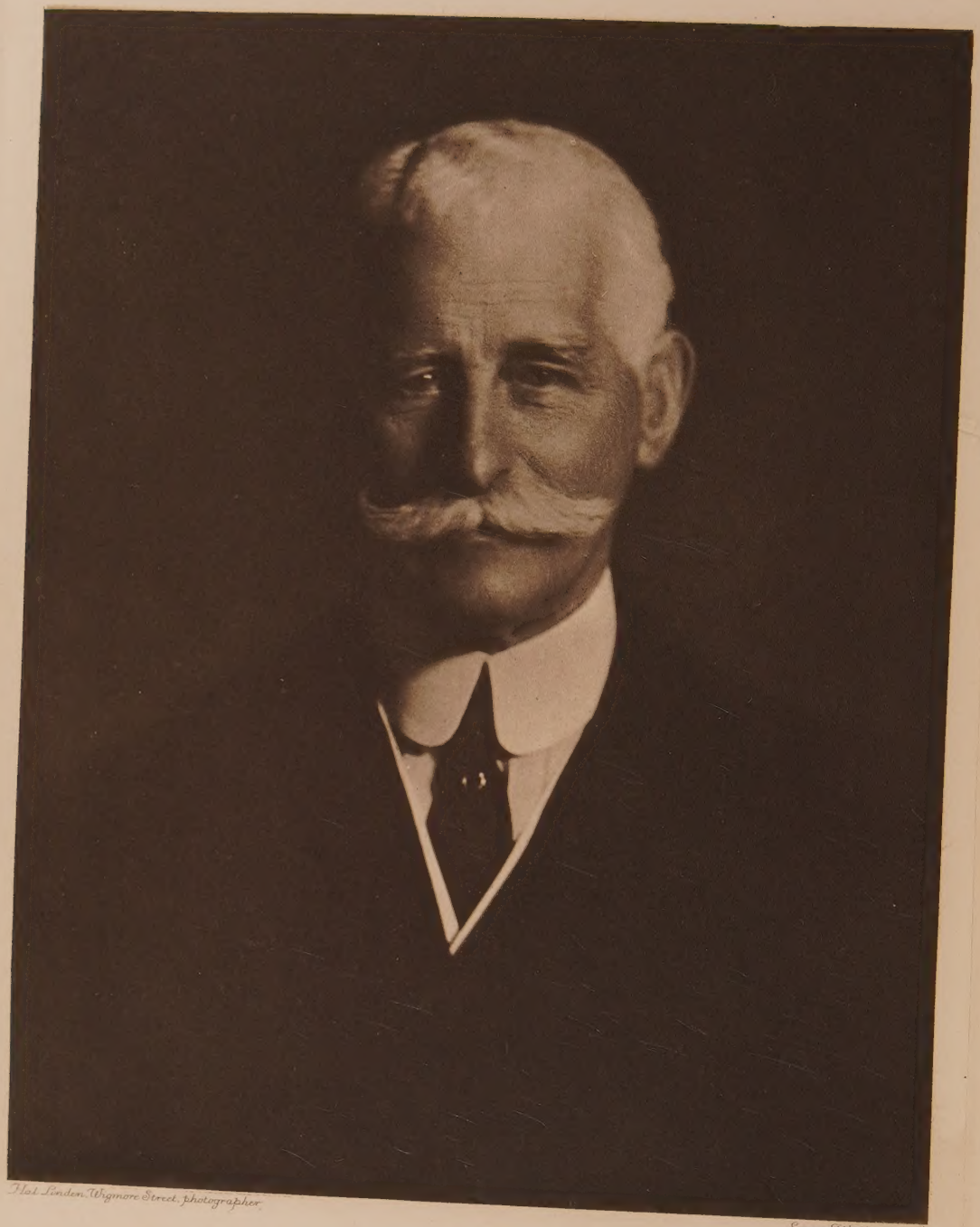

Hist. Linden, Wigmore Street, photographer.

Emery Walker ph. sc.

Sir George Lindsay Holford K.C.V.O.
1860-1926

Ellis Roberts pinxit

Emery Walker ph.sc.

Robert Stayner Holford
1808-1892

CATALOGUE OF THE
TREES & SHRUBS

IN THE COLLECTION OF
THE LATE
Lieut.-Col. SIR GEORGE LINDSAY HOLFORD
K.C.V.O., C.I.E., C.B.E.

Compiled by
A. BRUCE JACKSON, A.L.S.

OXFORD
AT THE UNIVERSITY PRESS
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1927

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PREFACE

WESTONBIRT, the Gloucestershire seat of the late Sir George Holford, situated about midway between Gloucester, Swindon, and Bath, stands on a plateau of the Cotswolds, some 350 ft. to 400 ft. above sea-level, being six miles from Badminton and four from the escarpment which borders the left bank of the Severn.

The early history of Westonbirt may be told in a few words. It came into the Holford family in the seventeenth century by the marriage of Sir Richard Holford with Miss Crewe, who then owned the property. Sir Richard, who was descended from an ancient Cheshire family, was appointed Master in Chancery in 1693, and his son and grandson, also in their turn Masters in Chancery, became successive owners. The last, who died in 1803, was grandfather of the late Mr. R. S. Holford, Sir George's father, who was a most enthusiastic horticulturist. He was one of the first to take up orchid-growing, and was the founder of the famous arboretum here described. Mr. Holford, with the late Lord Somers and Sir Philip Egerton, were enthusiastic pioneers in arboriculture, and it was largely owing to their friendship and inspiration that the third Earl of Ducie began his famous collection at Tortworth in Gloucestershire, the only rival to Westonbirt, to which he devoted his time and knowledge from the year of his succession until his death at the age of 93 in 1921. Mr. H. J. Elwes, a neighbour of Sir George, used to say that within twenty miles of Gloucester and Perth there were more remarkable collections of trees than anywhere else in Great Britain.

The present mansion is the third upon the site, which was originally occupied by an old manor-house, demolished in 1818, and succeeded by another, which was removed by Mr. Holford in 1863 to make way for the present imposing structure, finished about 1871. The soil in this district is, generally speaking, a brashy limestone, overlying the oolitic rock, which is never very far from the surface. Such soil conditions

cannot be regarded as the most favourable for tree growth, but the owner was fortunate enough to discover a tract of sandy loam[1] about half a mile from the house. Here with remarkable skill and foresight he planned and laid out an extensive arboretum of about 100 acres. Subsequently a broad drive was cut through the adjoining woodland of 400 acres, known as Silkwood, and here Mr. Holford, and after him Sir George, planted on each side of the drive many rare and interesting trees and shrubs. Owing, however, to the ungenerous soil some of these are not well-developed specimens. It is indeed rare to find, as one does at Westonbirt, trees grouped and avenues laid out by a father and son who both possessed, to such a remarkable degree, the natural taste for planting, as well as the power of visualizing the ultimate result of their work, and who both devoted the largest part of their life to their favourite pursuit. The charm of Westonbirt lies not so much in the number of species represented and in the beauty and symmetry of the individual specimens, as in the skilful manner in which evergreens, like yew and box, have been used as a background so that each plant or group of plants stands in a perfect setting.

It is difficult to realize that where now extend these wonderful plantations, with their seemingly endless variety of conifers and deciduous trees, there existed seventy years ago only arable fields, sparsely clothed with hedgerow elm, oak, and thorn. Of conifers, too, there are many stately groups, as well as noble individual specimens still in their prime, and these afford pleasure to the tree lover at all seasons of the year. The park and pleasure-grounds, in the laying out of which Gilpin was concerned, are a most admirable example of the landscape style. The garden front of the house, with its southerly aspect, has before it wide terraces supported by parapet walls, forming a vantage-point from which to survey the beauties of the garden, with groups of well-chosen trees and shrubs.

To see Westonbirt in mid-October, when the maples take on their red autumnal magnificence, and the garden and woods are ablaze with crimson, scarlet, and gold, is to recall in some measure the 'Indian summer' of the Eastern States. Although the Japanese Maples contri-

[1] This belongs geologically to the Forest Marble series.

bute most largely to this autumn pageant, the splendour of the scene is enhanced by the great variety of the trees and shrubs which companion them. It was at this season that Sir George and Lady Holford especially loved to have their gardening friends with them, and the 'colour parties' have for many autumns past been an institution at Westonbirt.

Sir George succeeded his father in the ownership of the Gloucestershire and Wiltshire estates in 1892. During the last twenty years, and still more when the death of King Edward relieved him from his duties at Court, his garden and arboretum became the greatest interest of his life, and he has thus worthily upheld the horticultural traditions of Westonbirt. He procured plants of all the newer introduced species, or raised them from seed, and gave much thoughtful care to the positions they were to occupy. In one part of the arboretum, known as the Down Cover, and in a corner of Silkwood, Sir George during the last twelve years had grown a collection of the choicest rhododendrons, quite worthy of comparison with those of Cornwall, Sussex, and Galloway. The backgrounds for these plants were chosen by him with the same care which he devoted to the grouping of his other shrubs.

Thus for nearly a century has tree-planting gone on at Westonbirt almost without interruption, and the skill and enthusiasm of two generations have achieved such a result that the visitor may wander over five hundred acres of arboretum and woodland and find at every few steps a new tree to admire. Some idea of the results of such arboricultural activity will be gathered from the following pages, but the state of completeness to which this enumeration has been brought is due in large measure to the unwearying help and encouragement the compiler has received at all times from the distinguished owner, who alas! did not live to see the book completed, and his devoted cousin and agent, Mr. David Lindsay. Sir George himself contributed many personal notes to the catalogue, greatly enhancing its value. His friend and mine, Mr. F. R. S. Balfour, has made many useful suggestions, and given valuable assistance with the proof-reading.

The average rainfall at Westonbirt for the 20 years from 1881 to 1900 was 33·25 inches, and for the 25 years from 1900 to 1925 was 37·10 inches. The greatest rainfalls were 50·24 inches in 1912 and

48·27 inches in 1910. The smallest falls were 23·16 inches in 1921 and 25·21 inches in 1905. The greatest rainfall in one month was 9·81 inches in October 1891, while in June 1925 only 0·01 inch of rain fell altogether.

On 27 January 1910, 26 degrees of frost were registered, 25 degrees on 3 March 1909, and 25 degrees on 29 December, 1908. Between 6 and 13 November, 1921, from 12 to 18 degrees of frost were registered and did considerable damage to shrubs, especially to the Himalayan Rhododendrons, the sap of which was still up on account of the mild autumn. The bark of many large plants of *Rhododendron arboreum*, some of them 10 ft. high, was split, while a great many of the Chinese Rhododendron seedlings in the Arboretum and Silkwood were killed.

A. BRUCE JACKSON.

WESTONBIRT,
October, 1926.

COMPILER'S NOTE

AN alphabetical arrangement has been adopted as the most convenient for consultation. The Latin name and authority of each species are followed by the English or popular name when such is in common use. For the benefit of the non-botanical reader an index of popular names has been included. The natural family of each genus is given, but is not repeated after the name of each species. The country of origin and date of introduction are also indicated.

The more interesting and important trees have all been carefully measured with Stanley's apomecometer, measurements of girths being taken at 5 ft. from the ground wherever possible.

The Catalogue may be regarded as a complete list of all the trees and shrubs cultivated in the open air at Westonbirt, with the exception of a few common species found practically in every garden, and some of the more recent introductions in the nurseries received too late for insertion.

The names adopted are mostly those of the Kew Hand-lists, and synonyms have with a few exceptions been omitted.

ADDENDA

Acer palmatum. Page 19, line 28 before No. 1301, read:

This tree died in 1926 and has since been cut down.

Also, before No. 528, last line of p. 19, read: Silkwood.

Aesculus turbinata. Page 30, after line 30, read:

Careful examination of the foliage of this tree shows it to be quite distinct from that of the true *Aesculus turbinata* at Kew. The leaves resemble more nearly those of a *Pavia*, being pale beneath and finely and closely serrate, with tufts of reddish brown pubescence in the axils of the nerves. The petioles are glabrous and not hairy at the apex as in *A. turbinata.* It may be a hybrid, with *A. turbinata* as one of the parents, and the fact that a seedling from it (No. 146) is much more like *A. turbinata* in foliage rather supports this view. We hope to give this tree further study the next time it flowers.

Page 99, after line 28, add:

Ilex latifolia Thunberg. Japan.

Bean, i. 648 (1914).

Pleasure Grounds. No. 1440 near the Sunken Garden.

Introduced in 1840.

CATALOGUE OF TREES AND SHRUBS AT WESTONBIRT

ABELIA GRANDIFLORA Rehder. (*A. chinensis* × *uniflora.*) (Family CAPRIFOLIACEAE.)

PLEASURE GROUNDS.

On the west bastion wall.

ABIES AMABILIS Forbes. (Family PINACEAE.) British Columbia, Oregon, Washington.

Sargent, Silva, xii. 125, t. 614 (1898); Elwes and Henry, iv. 782 (1909); Clinton-Baker, ii. 5 (1909); Bean, i. 118 (1914); Dallimore and Jackson, 84 (1923).

ARBORETUM. No. 867 in Specimen Avenue, a small tree planted in 1905.

Introduced into cultivation by Douglas in 1830. It seldom attains a large size in this country, being often attacked by 'knotty disease', which produces gouty swellings on the branchlets and is due to the attacks of a species of Chermes.

ABIES BALSAMEA Miller. Balsam Fir. Eastern North America.

Loudon, iv. 2339 (1838) (as *Picea balsamea*); Sargent, Silva, xii. 107, t. 610 (1898); Clinton-Baker, ii. 6 (1909); Elwes and Henry, iv. 803 (1909); Dallimore and Jackson, 86 (1923).

ARBORETUM. Young plant (No. 1539) put out in Specimen Avenue in 1923.

Introduced in 1697 by Bishop Compton.

ABIES BRACHYPHYLLA Maximowicz. Nikko Fir. Japan.

Bot. Mag., t. 7114 (1890) (as *A. homolepis*); Elwes and Henry, iv. 765 (1909); Clinton-Baker, ii. 8 (1909); Bean, i. 118 (1914); Wilson, Conifers of Japan, 57 (1916) (as *A. homolepis*); Dallimore and Jackson, 88 (1923).

ARBORETUM. In Loop Walk there is an exceptionally fine tree

(No. 1005), in splendid condition. In 1921 it measured 59 ft. in height by 4 ft. 9 in. in girth, and is probably one of the tallest specimens in cultivation. It was planted about forty years ago.

Silkwood. No. 1121 in Willesley Drive, measuring 50 ft. by 4 ft. 8 in. in 1921 and planted about 1878, is a well-grown tree.

This is the common fir of the mountains of Central Japan, where it grows with larch and other deciduous trees. It was introduced into cultivation about 1870, and was at first confused with *A. Veitchii*, a totally distinct species.

ABIES BRACTEATA Nuttall. Santa Lucia Mtns., California.

Bot. Mag., t. 4740 (1853); Sargent, Silva, xii. 129, tt. 615, 616 (1898); Elwes and Henry, iv. 796 (1909); Clinton-Baker, ii. 7 (1909); Bean, i. 120 (1914); Dallimore and Jackson, 90 (1923).

Arboretum. Young plant added in 1921.
Introduced in 1853.

ABIES CEPHALONICA Loudon. Greek Fir. Mountains of Greece.

Loudon, iv. 2325 (1838); Elwes and Henry, iv. 739 (1909); Clinton-Baker, ii. 9 (1909); Bean, i. 120 (1914); Dallimore and Jackson, 92 (1923).

Arboretum. A tree (No. 804) on the right of the Straight Drive beyond Wigmore Bottom, measuring 76 ft. high by 8 ft. 6 in. in girth. Another specimen (No. 841) in the Broad Avenue at Scotch Corner is 66 ft. 6 in. by 7 ft. Another fine one used to stand in the Main Drive between Wigmore Bottom and Down Pool and was 71 ft. by 6 ft. 6 in. when blown down in 1924. No. 863 in Specimen Avenue, a tree 60 ft. by 7 ft. 6 in. Young trees planted in Pool Avenue in 1923.

Abies cephalonica was introduced into cultivation in 1824 by General Sir Charles Napier, who sent seeds from Cephalonia.

ABIES CILICICA Carrière. Asia Minor, Northern Syria.

Clinton-Baker, ii. 10 (1909); Elwes and Henry, iv. 744 (1909); Bean, i. 121 (1914); Dallimore and Jackson, 93 (1923).

Arboretum. Young plant in Specimen Avenue, added 1923.
Introduced about 1855.

ABIES CONCOLOR Lindley. Colorado Fir. Western North America.

Sargent, Silva, xii. 121 (1898) in part; Elwes and Henry, iv. 777 (1909); Clinton Baker, ii. (1909); Bean, i. 121 (1914); Dallimore and Jackson, 95 (1923).

ARBORETUM. In the Down Cover there is a very handsome specimen (No. 1025) with glaucous foliage, which comes under the variety *violacea* Masters. In 1921 it was 28 ft. 6 in. high by 2 ft. in girth.

PLEASURE GROUNDS. No. 1358 by the conservatory is 48 ft. high by 2 ft. 9 in. in girth.

SILKWOOD. A group of five young trees, the largest of which is now 12 feet high, were planted in Sand Earth Corner facing Willesley Drive in 1914; they are all making good growth.

When full grown this is a most attractive conifer.

Introduced into cultivation about 1870.

ABIES FAXONIANA Rehder and Wilson. W. Szech'uan, China.

Pl. Wils., ii. 42 (1914); Dallimore and Jackson, 98 (1923).

ARBORETUM. Young specimens in Pool Avenue and Victory Glade, planted 1922 and 1923.

One of the newer Chinese firs, allied to *A. Delavayi*. It is now often met with in conifer collections, having been in cultivation for several years. Discovered by Wilson in 1908.

ABIES FIRMA Siebold and Zuccarini. Japan.

Elwes and Henry, iv. 762 (1909); Clinton-Baker, ii. 12 (1909); Bean, i. 121 (1914); Wilson, Conifers of Japan, 54 (1916); Dallimore and Jackson, 98 (1923).

SILKWOOD. No. 1063, a tree in the Broad Drive, 50 ft. by 3 ft. 6 in. Trees No. 1112 and 1122 in Willesley Drive, 47 ft. by 3 ft. 3 in. and 52 ft. by 5 ft. 7 in. respectively, are exceptionally good specimens.

This is the only fir known from Southern Japan. Wilson states that it is commonly planted in temple grounds and parks throughout the region where it grows naturally.

Introduced in 1861 by J. G. Veitch.

ABIES FRASERI Porrit. Southern Balsam Fir. Alleghany Mountains.

Loudon, iv. 2340 (1838); Sargent, Silva, xii. 105, t. 609 (1898); Elwes and Henry, iv. 806 (1909); Bean, i. 122 (1914); Dallimore and Jackson, 101 (1923).

Young imported American plants in Rattray's Nursery received from G. W. E. Loder in 1920.

Introduced about 1807. The true *Abies Fraseri* is seldom seen in gardens, and many plants so called in nurseries are really *A. balsamea*, with which *A. Fraseri* has been much confused. It was introduced into cultivation in 1807 by John Fraser, a Scotch botanist and traveller, after whom it was named.

ABIES GRANDIS Lindley. Vancouver to California.

Sargent, Silva, xii. 117, t. 612 (1898); Elwes and Henry, iv. 773 (1909); Clinton-Baker, ii. 14 (1909); Bean, i. 122 (1914); Dallimore and Jackson, 102 (1923).

There are many fine trees of this splendid fir at Westonbirt, the following being the most noteworthy :

Arboretum. No. 949, on the right between Main Drive and 'Texas' before reaching Down Pool, in a sheltered position, has grown with extraordinary rapidity, having been moved there less than forty years ago. It is now one of the tallest trees in the Arboretum, being 106 ft. high by 7 ft. 9 in. A tree (No. 800) on the Straight Drive between Wigmore Bottom and the Down Gate was originally over 100 feet high, but has had its top blown out on two occasions. Its girth is 10 ft. 6 in. Another (No. 1014) in the Down Cover is 98 ft. by 9 ft. 6 in. In the Middle Ride, at the corner of the Lime Avenue, there is a group of six trees about 80 feet high, the tallest being 88 ft. by 7 ft. In Specimen Avenue there is a tree (No. 862) 85 ft. by 8 ft. which is still (1921) growing vigorously. Another tree (No. 889) in the same avenue is 90 ft. by 9 ft. Four young trees were planted in Victory Glade, facing Broad Ride, in 1920, when 10 feet high.

Silkwood. No. 1057, in the Broad Drive, planted about 1880, is 79 ft. by 7 ft. 8 in. No. 1065, an exceptionally fine and well-shaped tree on the left of the Broad Drive coming from the Waste, is 95 ft. by 9 ft. 5 in. (Plate 1). Several other large groups in the Broad Drive.

This handsome conifer grows with great rapidity, especially when

ABIES GRANDIS

In Silkwood

ABIES LOWIANA

In Specimen Avenue

planted in moist situations. Sargent states that it sometimes reaches a height of 300 feet in its native habitats. It was introduced by Douglas about 1832.

ABIES LASIOCARPA Nuttall. Rocky Mountain Fir. Western North America.

Sargent, Silva, xii. 113 (1898); Elwes and Henry, iv. 800 (1909); Clinton-Baker, ii. 15 (1909); Dallimore and Jackson, 107 (1923).

ARBORETUM. A small tree (No. 888) recently planted in Specimen Avenue.

Var. *arizonica* Lemmon.

Elwes and Henry, iv. 801 (1909).

SILKWOOD. Two young specimens planted in Sand Earth Corner in 1919.

This species appears to have been introduced about forty years ago, but has never thriven in this country, and no large trees are known. Most of the specimens in gardens are stunted and unhealthy.

The variety *arizonica* is distinguished chiefly from the type by its glaucous foliage and corky bark, but there are no plants old enough in cultivation to show the latter character.

ABIES LOWIANA Murray. California, Oregon.

Sargent, Silva, xii. 121 (1898) (as *A. concolor*); Elwes and Henry, iv. 779 (1909); Clinton-Baker, ii. 16 (1909); Bean, i. 122 (1914); Dallimore and Jackson, 108 (1923).

ARBORETUM. Two very handsome trees (Nos. 853 and 887) in Specimen Avenue are 77 ft. by 7 ft. (Plate 2) and 91 ft. by 8 ft. 5 in. respectively. Another (No. 802) near the Down Gate is 79 ft. by 7 ft.

PLEASURE GROUNDS. A tree (No. 1316) near the lake is 80 ft. high by 4 ft. 10 in. in girth.

SILKWOOD. No. 1060 in the Broad Drive, measuring 76 ft. by 5 ft. 7 in.

Sargent and other American authorities consider *A. Lowiana* and *A. concolor* to be forms of one variable species, but they appear to be distinct in cultivation.

Introduced by Lobb in 1851.

ABIES MAGNIFICA Murray. Shasta Fir. Oregon, California.

Elwes and Henry, iv. 792 (1909); Clinton-Baker, ii. 17 (1909); Bean, i. 123 (1914); Dallimore and Jackson, 109 (1923).

ARBORETUM. No. 884 in Specimen Avenue is 35 feet high. A small tree opposite Wigmore Bottom. A fine specimen in Loop Walk died quite suddenly in 1920.

Introduced in 1851 by John Jeffery.

ABIES MARIESII Masters. Japan.

Elwes and Henry, iv. 771 (1909); Clinton-Baker, ii. 18 (1909); Bean, i. 123 (1914); Wilson, Conifers of Japan, 59 (1916); Dallimore and Jackson, 112 (1923).

ARBORETUM. Young tree, 6 feet high, in Specimen Avenue, planted 1925.

Introduced by the Veitchian collector, Maries, in 1879.

ABIES NOBILIS Lindley. Western North America.

Sargent, Silva, xii. 133 (1898); Loudon, iv. 2342 (1838) (as *Picea nobilis*); Elwes and Henry, iv. 786 (1909); Dallimore and Jackson, 114 (1923).

ARBORETUM. The tallest specimen (No. 783) is near the Down Gate, and measures 81 ft. by 8 ft. Other good specimens on the Straight Drive and elsewhere.

SILKWOOD. A group of trees near the Waste Gate were planted about 1880, and are now 55 ft. high. No. 1134 in Willesley Drive, a beautiful tree, is 66 ft. 6 in. by 6 ft. 4 in. and in excellent health (Plate 3).

Introduced by Douglas in 1825.

ABIES NORDMANNIANA Spach. Caucasus, Greece, Asia Minor.

Bot. Mag., t. 6992 (1888); Elwes and Henry, iv. 746; Clinton-Baker, ii. 20 (1909); Bean, i. 124 (1914); Dallimore and Jackson, 118 (1923).

Has been largely planted at Westonbirt.

ARBORETUM. In the Pool Avenue there is a splendidly furnished tree (No. 843), in fine condition, which is 71 ft. high by 5 ft. 8 in. in girth. No. 1027 in the Down Cover is a still finer specimen, measuring 85 ft. by 7 ft. 2 in. Four young trees were planted in Victory Glade in 1919 and 1920. Other fine trees in Broad Avenue.

ABIES NOBILIS

Willesley Drive, Silkwood

ABIES NUMIDICA

In Specimen Avenue

SILKWOOD. Numerous specimens; a group of young trees planted in Willesley Drive about 1914 are now about 12 feet high.

This fir commemorates the Finnish botanist, Nordmann, who found it in the Caucasus in 1836. It was introduced into England about 1836, and is one of the commonest and hardiest *Abies* in cultivation.

ABIES NUMIDICA De Lanney. Algeria.

Elwes and Henry, iv. 737 (1909); Clinton-Baker, ii. 21 (1909); Bean, i. 125 (1914); Dallimore and Jackson, 119 (1923).

ARBORETUM. No. 892 in Specimen Avenue, a tree 25 ft. by 2 ft., planted in 1910 (Plate 4). Young plants in Broad Ride planted 1925.

SILKWOOD. An exceptionally fine specimen (No. 1067), measuring 49 ft. 2 in. by 4 ft. 2 in., is growing on the right behind the European Oak collection in the Broad Drive.

Abies numidica, although introduced into cultivation about sixty years ago, is still a rare tree in collections.

ABIES PECTINATA De Candolle. Silver Fir. Mountains of Central and Southern Europe.

Loudon, iv. 2329 (1838) (as *Picea pectinata*); Elwes and Henry, iv. 720 (1909); Clinton-Baker, ii. 22 (1909); Bean, i. 126 (1914); Dallimore and Jackson, 120 (1923).

ARBORETUM. The tallest silver fir at Westonbirt is in Wigmore Bottom (No. 763). Its dimensions are: height, 106 ft.; girth, 10 ft. 7 in.

There are other trees in Specimen Avenue and Silkwood.

Abies pectinata has no rival in size among coniferous trees in Great Britain, but like most tall trees is very liable to be blown down when encountering a severe gale. In some parts of England silver firs have been known to attain a height of 140 feet or more.

Introduced into cultivation about 1600.

ABIES PINDROW Spach. Himalayas.

Loudon, iv. 2346 (1838) (as *Picea Pindrow*); Elwes and Henry, iv. 755 (1909); Clinton-Baker, ii. 23 (1909); Bean, i. 126 (1914); Dallimore and Jackson, 124 (1923).

ARBORETUM. Young plant in Rattray's Nursery received in 1921.

Introduced in 1837.

ABIES PINSAPO Boissier. Spanish Fir. Southern Spain.

Elwes and Henry, iv. 732 (1909); Clinton-Baker, ii. 24 (1909); Dallimore and Jackson, 127 (1924).

ARBORETUM. No. 803 on right of Straight Drive beyond Wigmore Bottom. There are also trees in Specimen Avenue and the Broad Ride.

PLEASURE GROUNDS. The tree by the Church Gate is an exceptionally fine one, its dimensions being 74 ft. by 6 ft. 7 in., and it is probably one of the earliest planted in this country. Another old forked specimen on the lower terrace.

Introduced in 1839.

ABIES RELIGIOSA Schlechtendal. Mexican Fir. Mountains of Mexico and North Guatemala.

Loudon, iv. 2349 (1838) (as *Picea religiosa*); Bot. Mag., t. 6753 (1884); Elwes and Henry, iv. 808 (1909); Clinton-Baker, ii. 25 (1909); Dallimore and Jackson, 129 (1923).

ARBORETUM. Young plant in Down Cover put out in 1922.

The branches of this fir are used in Mexico for decorating churches, hence the specific name.

Introduced in 1838.

ABIES SIBIRICA Ledebour. Mountains of North-Eastern Russia and Siberia.

Loudon, iv. 2338 (1838) (as *Picea Pichta*); Forbes, Pinet. Woburn. 113, t. 39 (1840); Elwes and Henry, iv. 758 (1909); Dallimore and Jackson, 131 (1923).

ARBORETUM. Young plant added 1925.

Introduced in 1820, but has proved a poor doer in this country.

ABIES VEITCHII Lindley. Japan.

Elwes and Henry, iv. 768 (1909); Clinton-Baker, ii. 28 (1909); Bean, i. 127 (1914); Wilson, Conifers of Japan, 61 (1916); Dallimore and Jackson, 132 (1924).

ARBORETUM. No. 876 in Specimen Avenue, a young tree planted in 1916 and now 15 feet high. Young trees were put out in Middle Ride, and also in Pool Avenue, in 1923.

This, the smallest of the Japanese firs, is an alpine species occurring on the high mountains of Central Japan. It was discovered on Fuji-san by J. G. Veitch in 1860, and introduced by the Veitchian collector, Maries, in 1879.

ABIES VILMORINI Masters. (*A. cephalonica* × *Pinsapo.*) Hybrid origin.

Elwes and Henry, iv. 732 (1909): Dallimore and Jackson, 134 (1923).

ARBORETUM. Young plant, 5 ft. high, put out in Middle Ride in 1923.

First raised in 1867.

ABIES WEBBIANA Lindley. Himalayan Fir.

Bot. Mag., t. 8098 (1906) (as *A. Mariesii*); Elwes and Henry, iv. 750, t. 215 (1909); Clinton-Baker, 29 (1910); Bean, i. 128 (1914); Dallimore and Jackson, 136 (1924).

ARBORETUM. Two young trees (Nos. 839 and 840) in Broad Ride, at back of Scotch Corner, planted in 1918.

Introduced about 1820.

Var. *brevifolia*, Henry.

Elwes and Henry, iv. 751 (1909).

ARBORETUM. Young plant in Rattray's Nursery.

ABUTILON VITIFOLIUM De Candolle. (Family MALVACEAE.) Chile.

Bot. Reg., vol. 30, t. 57 (1844); Bean, i. 128 (1914).

ARBORETUM. Young plants in the Down Cover.

First raised in Dublin in 1836.

ACANTHOPANAX HENRYI Harms. (Family ARALIACEAE.) Central China.

Bot. Mag., t. 8316 (1910); Bean, i. 129 (1914).

ARBORETUM. Planted in Middle Ride in 1923.

Introduced by Wilson in 1901.

ACANTHOPANAX RICINIFOLIUM Seemann. China, Japan.

Bean, i. 131 (1914).

GARDEN. No. 1227, near Pergola.
Introduced into Europe about 1865.

ACER BARBINERVE Maximowicz. (Family ACERACEAE.) Manchuria, Corea.

Pax in Engler, Jahrb., xvi (1892).

Young plant put out in Middle Ride in 1925.
Of recent introduction.

ACER CAMPESTRE Linnaeus. Common Maple. Europe, West Asia.

Loudon, i. 428 (1838); Elwes and Henry, iii. 651 (1908); Bean, i. 136 (1914).

A frequent tree at Westonbirt. The foliage turns a beautiful golden yellow in autumn. The finest trees are in the Rough Ground Plantation, the best of these being 66 ft. high by 6 ft. 5 in. at 4 ft. up. In some woods and hedgerows on the Cotswolds it forms the greater part of the underwood.

Var. *Schwerini* Hesse.

Two trees, one in Old Nursery and one in Willesley Drive, Silkwood. The leaves of this variety, which are purple on first expanding, turn green afterwards.

ACER CAPILLIPES Maximowicz. Japan.

Bean, i. 136 (1914).

Young plants in Kitchen Garden Nursery.

ACER CARPINIFOLIUM Siebold. Hornbeam Maple. Japan.

Gard. Chron., 1881, f. 105; Bean, i. 137 (1914).

ARBORETUM. No. 214 at Clay Island. No. 248 in Acer Grove is a well-grown specimen 18 ft. high and 1 ft. 6 in. in girth at 3 ft. from the ground. No. 339 in Down Cover. Middle Ride young trees put out 1925.

Very distinct in foliage, which strongly resembles that of the hornbeam.

Silkwood. Willesley Drive.

Introduced in 1879 by Messrs. Veitch.

ACER CIRCINATUM Pursh. Vine Maple. Western North America.

Bean, i. 137 (1914).

Pleasure Grounds. Young tree, near end of lake, planted 1924.

Silkwood. Small trees in the maple collection in the Broad Drive.

Introduced by Douglas in 1826.

ACER CISSIFOLIUM Koch. Japan.

Bean, i. 137 (1914).

Arboretum. A small spreading tree on the right beyond Wigmore Bottom is 18 ft. by 1 ft. 5 in. Young plant in Middle Ride, added 1925.

Pleasure Grounds. Two very fine trees, Nos. 1282 and 1296, which fruit abundantly. Prof. Sargent saw these trees in 1907 and considered them to be as large as any he had met with in Japan. They measured 27 ft. by 2 ft. 6 in. and 35 ft. by 3 ft. 4 in. respectively in 1921. They were planted about 1870.

Silkwood. A small tree, No. 168, in the maple collection by the Broad Drive. Planted in 1878.

Date of introduction uncertain.

ACER CRATAEGIFOLIUM Siebold and Zuccarini. Japan.

Bean, i. 139 (1914).

Young tree in 'Texas' received from Rostrevor and put out in 1925.

Introduced in 1879.

ACER DASYCARPUM Ehrhart. Silver Maple. Eastern North America.

Sargent, Silva, ii. 103 (1892); Elwes and Henry, iii. 674 (1908); Bean, i. 139 (1914).

Arboretum. No. 268 between the Pool and Down Cover, measuring 70 ft. by 5 ft. 6 in. There are smaller trees in the Broad Ride.

Pleasure Grounds. No. 1246, 73 ft. by 7 ft. 9 in.

Park. An old tree, No. 1437 a, in Old Lodge Clump, on right-hand side of drive going from the house is 70 ft. by 7 in.

Silkwood. No. 158 in the maple collection, Broad Drive, is 50 ft. by 3 ft. 3 in. Nos. 630 and 674 in Willesley Drive are 50 ft. by 4 ft. and 60 ft. by 4 ft. 2 in. respectively.

Introduced in 1725.

Var. *laciniatum* Pax.

Pleasure Grounds. A good specimen.

This species, which is one of our most ornamental maples, was introduced in 1725.

Silkwood. Entrance to Waste on right.

There are smaller specimens in the Old Nursery.

ACER DAVIDI Franchet. Central China.

Bean, i. 140 (1914).

Arboretum. Three trees: No. 83 in Acer Grove on right after passing Down Pool; No. 134, on right before reaching the Down Pool; and No. 232 at Clay Island. These were planted about 1916, and the tallest is now 14 ft. high.

Many young plants have been put out in the Arboretum and Pleasure Grounds.

The bark of this species is beautifully striped with white as in *A. pennsylvanicum* and *A. rufinerve*.

First introduced by Maries in 1879, and again by Wilson in 1902.

ACER DIABOLICUM[1] Blume. Japan.

Bean, i. 140 (1914).

Arboretum. No. 142 in the Main Drive on right before reaching the Down Pool is 46 ft. by 2 ft. 4 in., and the largest specimen we know of in cultivation; it is growing vigorously, but has so far produced no seed, the flowers being apparently male only.

Introduced by Maries in 1880.

[1] Said to have been so named on account of the stinging hairs on the fruit-carpels.

ACER FORRESTI Diels. Yunnan, China.

Notes, Royal Bot. Gard. Edinb., v. 165 (1912).

ARBORETUM. Acer Corner, a young tree planted in 1922. Rattray's Nursery.

Introduced since 1914.

ACER GINNALA Maximowicz. China, Japan, Manchuria.

Bean, i. 142 (1914).

ARBORETUM. No. 121 in the Main Drive.

PLEASURE GROUNDS. No. 1361.

SILKWOOD. No. 693 in the Willesley Drive.

One of the finest maples for autumn colour. Numerous specimens were planted by the late Mr. Holford, in the Arboretum and elsewhere, and provide some of the earliest and most brilliant of the autumn tints.

ACER GLABRUM Torrey. Rock Maple. Western North America.

Bean, i. 142 (1914).

Young plants in the Down Cover.

Introduced about 1884.

ACER GRISEUM Pax. Central China.

Bean, i. 143 (1921).

ARBORETUM. No. 216, Clay Island. No. 1484, in Acer Grove, is 14 ft. high; No. 1485, moved from Acer Corner to Hornbeam Corner near the Down Gate in 1921, is 16 ft. high.

The combination of trifoliolate leaves, rich brown flaking bark, and fine autumn colouring makes this one of our most distinct and beautiful maples.

No. 1485, although the tallest specimen at Westonbirt, has up to now shown none of the flaking of the bark so characteristic in the species. This maple is one of the latest to colour, and the effect of the fallen leaves beneath the tree after a sharp frost in November, with their ruby red upper surface and silvery white under surface, is very beautiful.

Acer griseum is rarely seen in gardens. It was introduced by Wilson for Veitch in 1901.

ACER HENRYI Pax. Central China.

Bean, i. 143 (1914).

Arboretum. A young tree (No. 254) on right of drive opposite Acer Corner, planted in 1914 when about 12 ft. high, is now 16 ft. by 9 in., and is the largest we know of in cultivation. It fruited abundantly in 1922, but none of the seeds were fertile.

This is one of the trifoliolate maples like *A. nikoense* and *A. cissifolium*, from which it differs in its entire margined glabrous leaves. It is also allied to *A. Negundo*.

Introduced by Wilson in 1903.

ACER HYBRIDUM Spach. (? *A. Opalus* × *Pseudoplatanus*.)

Bean, i. 144 (1914).

Park. A small tree, evidently of considerable age, on the edge of Rough Ground Cover.

Rare in cultivation.

ACER INSIGNE Boissier and Buhse. Caucasus.

Gard. Chron., x. 189, f. 24 (1891); Elwes and Henry, iii. 667 (1908); Bean, i. 144 (1914).

Silkwood. No. 666, in Willesley Drive, is a tree 48 ft. by 3 ft. 10 in., and was identified in 1921. It was probably planted about 1880. A large number of seedlings found beneath this tree have been transplanted to the nursery.

This maple, which is very rarely seen in cultivation, was introduced by Volxem in 1877.

ACER JAPONICUM Thunberg. Japan.

Bean, i. 144 (1914).

Var. *typica*.

Good plant at Acer Corner.

Var. *filicifolium* Hort.

Not uncommon in the Arboretum and Pleasure Grounds.

ACER LAETUM

Entrance to Arboretum

Var. *vitifolium* Veitch.

Journ. Roy. Hort. Soc., xxix. 337 (1904).

This variety, which is of distinctly more fastigiate habit than the type, is a great favourite at Westonbirt, being distributed throughout the Arboretum, Pleasure Grounds, and Silkwood. No maple gives a more brilliant or varied display of autumn colour, the central mass of foliage often remaining a vivid green, while the branches blaze into purple, crimson, scarlet, and orange. Later on the branches shed their leaves and the remainder of the plant then turns a rich yellow.[1]

Arboretum. Two trees (Nos. 262 and 265) in Acer Grove of upright growth are 20 to 25 ft. high, and certainly forty years old. One is rapidly going back. Another tree (No. 252) in the same grove, 18 ft. high and branching from the base, is twenty years younger.

Pleasure Grounds. Two good plants near the far end of the lake.

Silkwood. Many good specimens.

ACER LAETUM Meyer. (*A. pictum* var. *colchicum* Hort.) Caucasus, Asia Minor.

Elwes and Henry, iii. 991 (1908); Bean, i. 145 (1914).

This maple has been largely planted at Westonbirt under the name of *A. pictum*. The two finest trees are in the Pleasure Grounds, one (No. 1297) in a shrubbery by the boat-house, measuring 75 ft. by 5 ft. 1 in. (grafted at 3 ft.); the other (No. 1289) at the village end of the grounds, being 60 ft. by 5 ft. 5 in.

Var. *rubrum* Schwerin. (Var. *colchicum rubrum* Hort.)

Arboretum. Frequent. A fine tree of this variety which has the expanding young leaves red in colour stands in a plantation near the Main Gate. It was planted about 1850 and now measures 75 ft. by 5 ft. 11 in.; it has suckered to such an extent as to form a thicket round the parent trunk (Plate 5).

[1] Veitch (loc. cit.) says of this variety: 'A very handsome form which produces such a wealth of fern-like leaves that the branches are entirely hidden during the period of growth. The sharp points of the leaf lobes give the foliage a general resemblance to some species of vine, but the ten to twelve lobes into which they are divided are never found in a vine. A fully developed leaf measures from 4½ to 5 in. from the base to the tip, and has a finely serrate margin. In autumn the tints assumed vary from terra-cotta to yellow with a suffusion of deep claret purple. Young wood, reddish purple, deepening to almost black.'

Silkwood. Numerous specimens.

The species was introduced in 1840 and the var. *rubrum* in 1846. So far as we know the Japanese form of it, which is the true *Acer pictum*, has not been planted at Westonbirt. We are of the opinion, however, that both *A. pictum* and *A. laetum* are merely geographical forms of one species connected by intermediates.

Var. *aureum* Hesse.

Arboretum. No. 73 in the Straight Drive. No. 194 at the Down Cover end of Loop Walk.

Fine trees in the Old Nursery and elsewhere.

Var. *tricaudatum* Rehder. China.

Arboretum. Wigmore Field, a small tree. This very distinct variety was introduced by Wilson in 1901.

ACER LOBELI Tenore. South Italy.

Loudon, i. 409 (1838) (as *A. platanoides* var. *Lobeli*); Elwes and Henry, iii. 659 (1908); Bean, i. 146 (1914).

Two young trees added to the Westonbirt collection in 1922, one being planted at Acer Corner and the other in 'Texas'. Both are about 14 ft. high.

A handsome tree, apt to be mistaken for the Norway maple, which it resembles in foliage, but the habit and striped bark are very distinct.

Said to have been introduced in 1683.

ACER MACROPHYLLUM Pursh. Oregon Maple. South Alaska to California.

Loudon, i. 408 (1838); Sargent, Silva, ii. 89, tt. 86, 87 (1892); Elwes and Henry, iii. 681 (1908); Bean, i. 146 (1914).

Arboretum. A tree (No. 336) in the Down Cover, measuring about 65 ft. by 5 ft. 7 in.

Park. In the Western New Lodge clump is a very fine tree (No. 1429 a), which is probably the largest in cultivation, measuring 90 ft. by 7 ft. 10 in., and another (No. 1430 a) in the same clump is 75 ft. by 7 ft. 7 in. Both these trees were planted about 1840. An isolated tree

(No. 1441a) standing in the park opposite Wigmore Bottom is 59 ft. by 7 ft. 6 in.

Silkwood. Small trees, No. 181 in the maple collection, and Nos. 579 and 585 in the Willesley Drive.

This is the largest of the American maples, attaining a height of 150 ft. in some parts of the Pacific coast. The foliage is very handsome, individual leaves being sometimes a foot or more wide.

Introduced in 1812.

ACER MAXIMOWICZI Pax. Japan.

Schneider, ii. 239 (1912).

Arboretum. A young tree, No. 236 (Wils., No. 4427), at Acer Corner, planted about 1920.

ACER MIYABEI Maximowicz. Japan.

Bean, i. 148 (1914); Sargent, Forest Fl. Japan, 29 (1894).

Arboretum. A young tree, 12 ft. high, at Acer Corner, planted in 1920.

Introduced in 1875 by Prof. Sargent.

ACER MONSPESSULANUM Linnaeus. Montpelier Maple. Southern Europe, North Africa, Asia Minor, Caucasus.

Loudon, i. 427 (1838); Elwes and Henry, iii. 665 (1908); Bean, i. 148 (1914).

Arboretum. Two young trees, received from Arley Castle, planted in Victory Glade in 1925.

Introduced according to Loudon in 1739.

ACER NEGUNDO Linnaeus. Box Elder. North America.

Sargent, Silva, ii. 111, t. 96 (1892); Elwes and Henry, iii. 684 (1914); Loudon, i. 460 (1838) (as *Negundo fraxinifolium*).

Pleasure Grounds. No. 1299 near the boat-house is 45 ft. by 4 ft. 4 in. An old tree, No. 1433, near the Sunken Garden, 60 ft. high by 5 ft. 6 in., was blown down in 1924.

Var. *aureum* Hort.

Old Nursery.

Introduced by Bishop Compton in 1688.

ACER NIKOENSE Maximowicz. Japan.

Bean, i. 150 (1914).

This rare Acer is a favourite at Westonbirt, and has been planted in many situations. Among the best specimens are:

Arboretum. No. 100 in the Main Drive is 12 ft. high. No. 221 on the left opposite Clay Island, a thriving young tree. Other good trees about 12 ft. high in Acer Grove and 'Texas'. Tree (No. 1342) near the Church.

There are also five trees in Victory Glade.

Silkwood. Several trees.

This maple, by some considered the most beautiful of the genus, bears the largest and most richly coloured autumn foliage of any of the trifoliolate section. Several of the Westonbirt trees have recently borne fruit, but up to now none of the seed has proved fertile.

Introduced in 1881.

ACER OPALUS Miller. Italian Maple. South and Central Europe.

Loudon, i. 421 (1838); Elwes and Henry, iii. 663 (1908); Bean, i. 151 (1914).

Silkwood. No. 676 in the Willesley Drive, a small tree.

Var. *neapolitanum* Pax.

Silkwood. Two small trees, No. 166 and 184 in the maple collection.

Var. *obtusatum* Elwes and Henry.

Loudon, i. 420 (1838).

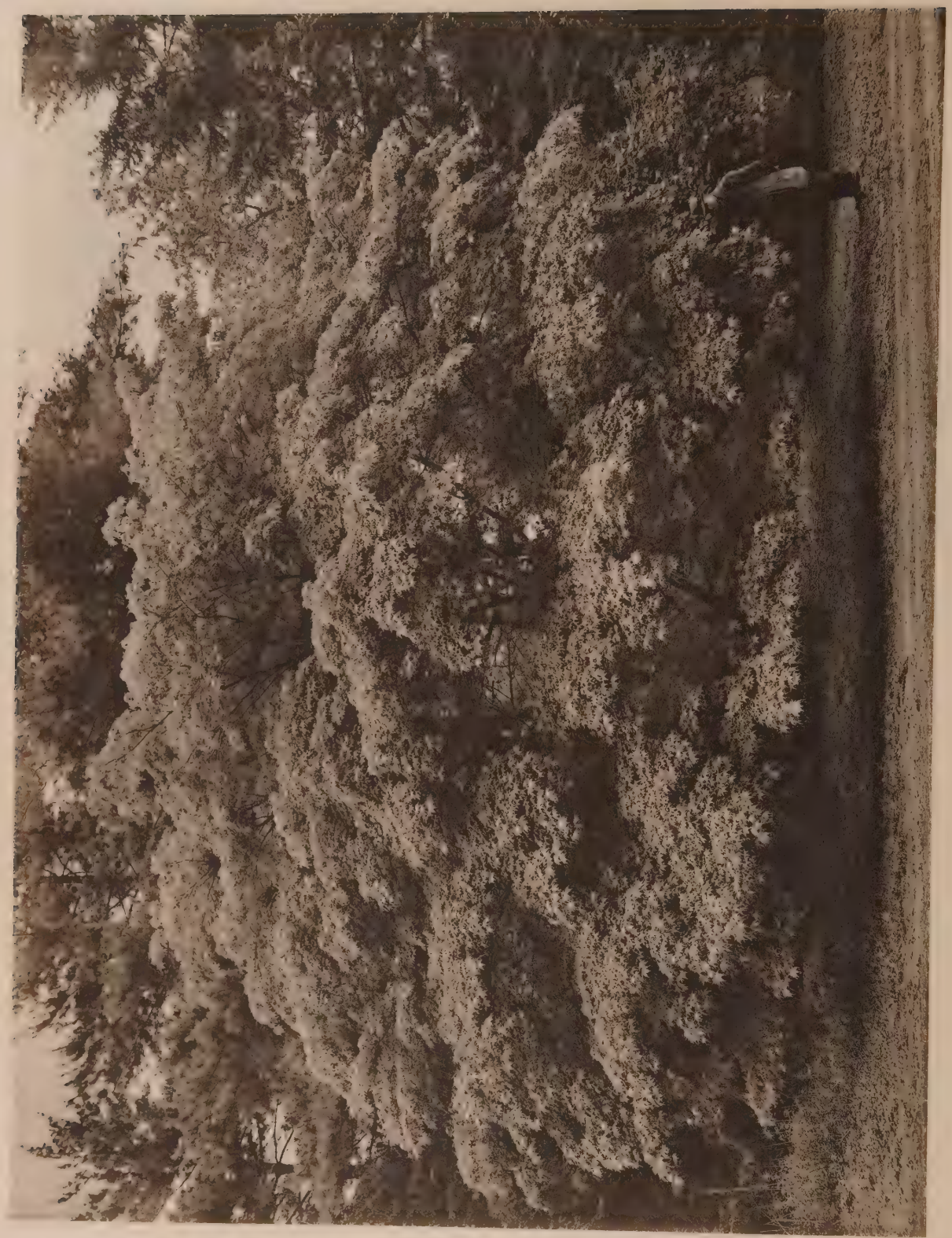
Silkwood. No. 153 in the maple collection, measuring 45 ft. by 3 ft. 5 in.

This species is a very ornamental tree in early spring when covered with its yellow blossoms, which appear before the leaves have expanded.

Introduced into cultivation in 1752.

ACER PALMATUM

In Pleasure Grounds



ACER PALMATUM

Wellesley Drive, Silkwood

ACER OPALUS × *RUBRUM.*

Young plants of this artificial hybrid were received from Arley Castle and planted in Victory Glade in 1925 when about 8 ft. high.

The cross was made in 1911 by the late Captain Robert Woodward, who fertilized the flowers of an old tree of *Acer rubrum* (No. 39 in the Arley Catalogue) with pollen from *Acer Opalus.* Numerous seedlings were raised.

ACER PALMATUM Thunberg. (*A. polymorphum* Siebold and Zuccarini.) Japan.

Sieb. and Zucc., Fl. Jap. 83, t. 145 (1870); Journ. Roy. Hort. Soc., xxix. 338 (1904); Elwes and Henry, iii. 639 (1908); Bean, i. 152 (1914).

There is no garden in England where the decorative value of Japanese maples is seen to better effect than at Westonbirt, and this is especially the case with regard to *Acer palmatum* and its numerous forms or varieties.

Some of the older specimens after more than half a century's growth in suitable soil and climate have become trees of exceptional size and beauty. In favourable autumns the brilliancy of their colouring affords a striking picture. Hundreds of seedlings, showing great variation of form, size, colour, and cutting of leaf, have been raised at Westonbirt. The following are the most noteworthy specimens:

Arboretum. No. 251, on the margin of Down Cover, is one of the largest specimens, and was planted more than fifty years ago. It is 14 ft. high and 2 ft. in girth at 2 ft. from the ground with a spread of 25 ft. The foliage turns a bright pink in autumn. No. 266, in Acer Grove, is 25 ft. by 2 ft. 3 in.

Pleasure Grounds. No. 1281, one of the original trees obtained from Veitch about 1868, is 31 ft. by 3 ft. 1 in. No. 1301, near the lake, is 30 ft. high, with a girth of 4 ft. 2 in. and a spread of 40 ft.; it is the largest of the Japanese maples at Westonbirt, and one of the most beautiful trees in the garden, though now beginning to decline (Plate 6). No. 1328, another fine specimen, has a spread of 28 ft. and is 90 ft. in circumference. No. 1302, on a bank near the lake, is 10 ft. high and 14 ft. through after ten years' growth. It is a home-raised seedling. No. 528, a large tree in Willesley Drive recently transplanted, was

formerly known as *A. polymorphum septemlobem ampelopsifolium* (Plate 7).

Var. *aureum* Nicholson.

Silkwood. Small plant in the Broad Drive.

Var. *crispum* André.

Arboretum. A form of this with the curiously involute leaves, showing whitish rose-coloured margins like var. *roseo-marginatum*, has been planted in the Broad Ride (No. 283), and is very distinct in its erect habit.

Var. *dissectum* Koch. (*A. polymorphum palmatifidum* Van Houtte.)

Frequent in the Arboretum and Pleasure Grounds. One of the most ornamental of the *palmatum* forms. One of Veitch's original plants from Coombe Wood, where it had stood in the Specimen Walk for over thirty years, was planted in 1913 in Acer Grove, and is now 8 ft. high and 1 ft. in girth at 2 ft. from the ground, and has a spread of 10 ft. 8 in.

Var. *dissectum ornatum* Carrière. (Var. *dissectum atropurpureum* Hort.)

A very beautiful form with deep red or purplish foliage which has a delicate bronzy tint in Spring. One of the best specimens is No. 1268 by the rockery in the Pleasure Grounds. It is 9 ft. high, over 1 ft. in girth, and was probably planted about 1870 (Plate 8).

Var. *linearilobum* Siebold and Zuccarini.

Pleasure Grounds.

Var. *ribesifolium* Hort.

A single plant of neat habit with small deeply incised leaves, growing with other forms of *A. palmatum* in Pool Avenue, belongs to this variety.

Var. *septemlobum* Schwerin.

Pleasure Grounds. No. 1250, an exceptionally good example of the seedling form known as 'Ozakazuki' on the lawn in front of the house; it is 17 ft. high, and has a spread of 22 ft. The foliage of this form, which has been planted in many places, turns a brilliant scarlet in mid-October.

ACER PALMATUM, var. DISSECTUM ORNATUM

In Pleasure Grounds

ACER PALMATUM, var. SEPTEMLOBUM ELEGANS

In Acer Grove

Var. *septemlobum atropurpureum* Hort.

No. 119, in the Main Drive, is 28 ft. high, 2 ft. 6 in. in girth at 2 ft. 6 in. from the ground, and has a spread of about 32 ft. It was planted about 1870, and colours brilliantly in favourable seasons.

ARBORETUM. Acer Corner, and in many other places.

PLEASURE GROUNDS. A specimen (No. 1270) on the rockery is 20 ft. high, branching into three main stems, has a spread of 20 ft., and gives a most effective display of colour. Another fine plant near (No. 1271) is about 20 ft. high and 3 ft. 10 in. in girth.

Var. *septemlobum elegans* Hort.

ARBORETUM. No. 267 in Acer Grove, measuring 10 ft. high by 1 ft. 9 in. in girth, with a spread of over 26 ft. (Plate 9). No. 228, on Clay Island, has very elegant foliage, approaching var. *dissectum*.

There is a purple-leaved form of this variety which has been largely planted at Westonbirt.

Var. *septemlobum reticulatum* André.

ARBORETUM. No. 215 a at Clay Island. Acer Corner.

Var. *septemlobum sanguineum* Hort. (Var. *septemlobum rubrum* Schwerin.)

Planted in many places.

Var. *sessilifolium* Maximowicz. (*A. palmatum* var. *decompositum* Hort.)

ARBORETUM. No. 86 in the Straight Drive. No. 239, at Clay Island, is a tree 12 ft. high.

PLEASURE GROUNDS. No. 1392 near the sunk fence by the Terrace.

Var. *variegatum* Hort.

ARBORETUM. No. 282 in the Broad Ride.

ACER PENNSYLVANICUM Linnaeus. Snake Bark Maple. Eastern North America.

Loudon, i. 407 (1838) (as *A. striatum*); Bean, i. 153 (1914).

SILKWOOD. No. 633, in the Willesley Drive, is 20 ft. high by 1 ft. 8 in.

Young plants in the Orchid Nursery.

The beautifully striped bark makes this a very attractive tree, especially in winter. The Eastern maples, *A. capillipes*, *A. rufinerve*, and *A. Davidi*, have similar striated bark, but much smaller leaves.

Introduced in 1759.

ACER PLATANOIDES Linnaeus. Norway Maple. Europe.

Loudon, i. 408 (1838); Elwes and Henry, iii. 656 (1908); Bean, i. 154 (1914).

This handsome maple has been largely planted at Westonbirt, where there are a number of trees 50 feet or more high; they produce a beautiful effect in spring when covered with yellow blossoms, and again in autumn, when the foliage fades into various shades of brown, red, and yellow.

Arboretum. Near the entrance to the Arboretum is a tree 75 ft. high by 5 ft. 11 in. No. 299, in Pool Avenue, is 77 ft. 4 in. by 5 ft.

Park. A fine spreading tree standing near the Main Drive is 75 ft. by 8 ft. 10 in. (Plate 10).

Silkwood. No. 447, on the corner of Willesley Drive and the Broad Drive, is 50 ft. high by 4 ft. 6 in. and colours finely. There are many other fine trees in the wood.

Var. *albo-variegatum* Nicholson.

No. 162 in the maple collection.

Var. *cuculatum* Nicholson.

Silkwood. Two trees in the maple collection, one, No. 170, a very fine specimen of this variety, measuring 52 ft. by 3 ft. 4 in. Tree 30 ft. high at top of the Waste behind the Sea Buckthorn Clump. Another tree close by.

Var. *palmatum* Koch. (*A. Lorbergi* Van Houtte.)

Silkwood. No. 165 in the maple collection is a fine specimen of this distinct variety, 45 ft. high by 2 ft. 11 in., and divides into three main branches 12 ft. from the ground. No. 155, also in the maple collection, is 28 ft. by 3 ft.

Introduced in 1845.

Var. *globosum* Nicholson.

Silkwood. Two old trees in the maple collection. Another tree in the Willesley Drive.

ACER PLATANOIDES

In Park

SYCAMORE

In Pleasure Grounds

Var. *laciniatum*, Aiton. Eagle's Claw Maple.

ARBORETUM.

Var. *Reitenbachii* Nicholson.

PARK. On left before reaching the new lodges.

ARBORETUM. No. 343 in the Down Cover.

SILKWOOD. Tree on right entering Waste behind Sea Buckthorn. No. 175 in the maple collection.

Var. *Schwedleri* Koch.

PARK. On right of Drive half-way to Old Lodge Clumps. A good specimen.

PLEASURE GROUNDS. No. 1386, near the sunk fence, is 51 ft. high by 4 ft. 1 in.

SILKWOOD. There are two good specimens in the maple collection, No. 159 measuring 41 ft. by 3 ft. 6 in., and No. 164 measuring 50 ft. by 2 ft. 10 in. Others in Willesley Drive.

In this variety the leaves are bright red when young and turn dark green in late summer. The contrast of yellow flowers and bronzy young foliage is very attractive in spring-time.

The Norway maple was introduced according to Loudon in 1683.

ACER PSEUDOPLATANUS Linnaeus. Sycamore. Europe, Asia Minor, Caucasus, North Persia.

Loudon, i. 414, 448 (1838); Elwes and Henry, iii. 641 (1908).

Very common at Westonbirt, where it produces an abundance of seedlings. The magnificent sycamore which stands in the Pleasure Grounds opposite the dining-room is a tree of great distinction and beauty (Plate 11). When measured in 1920 it was 90 ft. high by 12 ft. 6 in. in girth, and it appears still (1923) to be in the best of health. The date of planting is unknown, but its age cannot be less than 150 years old.

Var. *albo-variegatum* Loudon.

SILKWOOD. Nos. 151 and 156 in the maple collection. No. 646 in the Willesley Drive.

Var. *brilliantissimum* Hort.

ARBORETUM. Two small specimens in Pool Avenue.

Var. *erythrocarpum* Carrière.

SILKWOOD. Maple collection.

Var. *Hanjeryi* Späth.

ARBORETUM. Young trees planted in Victory Glade in 1920.

Var. *corstorphinense* Schwerin. Corstorphine Plane. A small tree, No. 736, on the Downs.

Var. *purpureum* Loudon.

PARK. On right of Drive before reaching lodges.

SILKWOOD. No. 154 in the maple collection, measuring 44 ft. by 2 ft. 10 in. No. 173, also in the maple collection, measuring 50 ft. by 3 ft. 8 in.

Many seedlings raised and planted out in groups on the Downs, and others in Waste and Silkwood.

ACER RUBRUM Linnaeus. Red Maple.

Loudon, i. 424 (1838); Sargent, Silva, ii. 107, tt. 94, 95 (1892); Elwes and Henry, iii. 671 (1908); Bean, i. 157 (1914).

ARBORETUM. A fine tree on left in Acer Grove. No. 341 in the Down Cover is a tree measuring 46 ft. by 2 ft. 6 in.

SILKWOOD. Two good specimens on left in the Waste. Several good trees in Broad Drive. No. 722 in the Willesley Drive is a tree 50 ft. by 2 ft. 8 in.

This maple colours magnificently at Westonbirt, especially the form known as var. *sanguineum* Lav., of which there are several examples in the Arboretum and Silkwood. The foliage begins to turn towards the end of August.

Var. *columnare* Rehder.

PARK. A tree of pyramid form, half-way to Old Lodge Clump on left.

Acer rubrum is one of the commonest of the American maples in cultivation. It was one of the first species to be introduced, being cultivated by Tradescant, gardener to Charles II, as long ago as 1656.

ACER RUFINERVE Siebold. Japan.

Bean, i. 157 (1921).

Arboretum. Among the best specimens is No. 252a, on the margin of Down Cover, a tree about 20 ft. high. No. 32 in the Broad Ride, No. 74 in the Straight Drive, No. 39 in Wigmore Field, No. 49 in Wigmore Bottom, are all flourishing young trees. Other good plants in Pool Avenue, one being 23 ft. high and another 22 ft. by 11 in. A fastigiate form at the opening opposite Victory Glade is 15 ft. high.

Silkwood. No. 161 in the maple collection, No. 705 in the Willesley Drive.

This maple is closely allied to *A. pennsylvanicum*, but differs from it in the smaller leaves and glaucous shoots. This is a very beautiful maple of the snake bark section. The white lines on the bark become more indistinct in older trees, which moreover show a tendency to lose their branches, which gradually die off, and two or three of the oldest trees at Westonbirt have had to be cut down when about thirty years old.

Introduced about 1879 by Maries, one of the Veitchian collectors.

Var. *albo-limbatum* Hooker.

Bot. Mag., t. 5793 (1869).

This striking form is another great favourite at Westonbirt, and numerous plants have been raised from seed and put out.

Arboretum. No. 115 in the Main Drive. No. 120 in the Main Drive is an exceptionally fine specimen, with a spread of 23 ft. and a stem 1 ft. 4 in. in girth.

Silkwood. Several good plants.

A very distinct-looking maple with handsomely variegated foliage. It was in cultivation some years before the typical form was introduced, being first exhibited in 1869. It is distinct in habit from the type, with more spreading branches, which show a tendency to weep. It comes true from seed, and it has a decidedly stronger constitution than the typical form. No maple carries more gorgeous tints nor has a greater range of autumn colour than this.

ACER SACCHARUM Marshall. Sugar Maple. North America.

Loudon, i. 411 (1838) (as *A. saccharinum*); Sargent, Silva, ii. 97, t. 90 (1892) (as *A. barbatum*); Elwes and Henry, iii. 677 (1908); Bean, i. 158 (1914).

There are an unusually large number of sugar maples at Westonbirt, where this tree has been more successfully cultivated than in any garden we know of in England. In some autumns the tint of the foliage is charming, being best described as flame-coloured, but young trees do not often colour well. It is apt to be confused with the Norway maple, but has the leaves pale-coloured beneath and no milky sap in the leaf-stalk.

ARBORETUM. No. 277 in the Middle Ride is a tree 74 ft. by 4 ft. 8 in. Nos. 337 and 351 are smaller trees in the Down Cover.

SILKWOOD. No. 380 between the Waste Gate and the Broad Drive. Nos. 464 and 468 in the Broad Drive. No. 694 in the Willesley Drive.

PARK. No. 1455 recently discovered in the Stable Clump, measuring 60 ft. by 4 ft. 10 in.

Much of the maple sugar of commerce is obtained from the sap of this species.

Introduced, according to Loudon, in 1735.

ACER SPICATUM Lamarck. Mountain Maple. Eastern United States. Canada.

Bean, i. 159 (1914).

SILKWOOD. A small tree, No. 473, in the Broad Ride has made but little growth, although planted more than forty years ago.

Introduced in 1750.

ACER SYRIACUM Boissier et Gaillard. Lebanon, Syria; Cyprus.

Pax in Engler, Jahrb., xvi. 375 (1892); Schneider, Laubholzkunde, ii. 234 (1912).

SILKWOOD. An old bushy tree (No. 712) in the Willesley Drive, hitherto known as *A. creticum*, which is, however, quite a distinct species. Not previously recorded as a cultivated tree, and we know of only two other trees in this country.

ACER TATARICUM Linnaeus. South-east Europe, Asia Minor.

Bean, i. 160 (1914).

ARBORETUM. No. 46, in a plantation near Wigmore Bottom, is

28 ft. high by 3 ft. 4 in. A smaller tree (No. 28) in the Straight Drive. A very old specimen in the clump near the right hand at entrance to the Arboretum.

Silkwood. Nos. 171 and 185 in the maple collection.

This maple is very distinct in foliage on account of its leaves, which are usually entire, and hardly suggest the genus *Acer*.

Introduced in 1759.

ACER TRAUTVETTERI Medwedjeff. Caucasus, Persia.

Bot. Mag. 6697 (1883) (as *A. insigne*); Elwes and Henry, iii. 669 (1908); Bean, i. 160 (1914).

Arboretum. No. 16 in the Middle Ride, a small tree.

Silkwood. No. 174 in the maple collection. In Willesley Drive, a small tree (No. 576).

Very rare in cultivation. Introduced in 1866.

ACER VOLXEMI Masters. Caucasus.

Gard. Chron., vii. 72, fig. 10 (1877); x. 18, 188, with fig. (1891); Elwes and Henry, iii. 668 (1908); Bean, i. 161 (1914).

Silkwood. Two trees, Nos. 152 and 172, in the maple collection, the latter measuring 55 ft. by 3 ft. 6 in.

A very handsome maple, the leaves resembling those of the common sycamore but much larger. It is also allied to *A. insigne*.

It was introduced about 1873, but is very rarely seen in private collections.

ACTINIDIA ARGUTA Planchon. (Family Ternstroemiaceae.) China, Japan, and Amur region.

Bot. Mag., t. 7497 (1896) (as *A. polygama*); Bean, i. 162 (1914).

Kitchen Garden Nursery.

ACTINIDIA CHINENSIS Planchon. China, Japan.

Bot. Mag., t. 8538 (1914), 1; Bean, i. 162 (1914).

Orchid Nursery, trained on the trunk of a Scots pine.

One of the handsomest of the Chinese climbers, introduced by Robert Fortune about 1842.

ACTINIDIA KOLOMIKTA Maximowicz. Manchuria, China, Japan.

Bean, i. 163 (1914).

Three plants added 1924. One planted in 1925 on the western wall of the head gardener's cottage.

AESCULUS CALIFORNICA Nuttall. Californian Buckeye. (Family SAPINDACEAE.) California.

Bot. Mag., t. 5077 (1858); Sargent, Silva, ii. 61, tt. 71, 72; Elwes and Henry, ii. 226 (1908); Bean, i. 167 (1914).

SILKWOOD. A small tree (No. 639) in the Willesley Drive.

Introduced about 1850.

AESCULUS CARNEA Hayne. Red Horse Chestnut. Origin uncertain.

Loudon, i. 467 (1838); Elwes and Henry, ii. 217 (1908); Bean, i. 168 (1914).

ARBORETUM and SILKWOOD. Several good trees, which are very ornamental when in flower.

This handsome tree is considered to be a hybrid between the common horse chestnut and *Ae. pavia.*

Var. *Brioti* Hort.

PARK. Two trees near the gardener's house. Two fine specimens in Old Nursery, one measuring 24 ft. high.

SILKWOOD. No. 602 in the Willesley Drive.

There are few more beautiful trees when in flower than this; in fact, only *Ae. pavia* can compete with it in brilliancy of colour.

AESCULUS CHINENSIS Bunge. Chinese Horse Chestnut. Northern and Central China.

Bean, i. 168 (1914).

Kitchen Garden Nursery. Young plant received from Kew in 1924.

Introduced in 1912.

This tree has been confused with *A. turbinata,* but is quite distinct.

AESCULUS HIPPOCASTANUM Linnaeus. Common Horse Chestnut. Mountains of Northern Greece.

Loudon, i. 463; iv. 2543 (1838); Elwes and Henry, ii. 210 (1908); Bean, i. 169 (1914).

Var. *flore pleno* Lemaire.

The Downs. Large tree near the keeper's house.

Var. *Memmingeri* Rehder.

Silkwood. A tree in the centre of the Broad Ride. This form has the foliage tinged with yellow.

Var. *umbraculifera* Rehder.

Arboretum. No. 229 in 'Texas'.

The horse chestnut was probably introduced into English gardens early in the seventeenth century. When in full flower it is one of the handsomest of our larger trees.

AESCULUS INDICA Colebrooke. Indian Horse Chestnut. North-west Himalayas.

Bot. Mag., i. 5117 (1859); Elwes and Henry, ii. 219 (1908); Bean, i. 171 (1914).

Arboretum. No. 316, a small tree about 15 ft. high in Loop Walk, planted in 1919. No. 326, another small tree, also in Loop Walk. Other young trees elsewhere.

Two young plants received from Syon Gardens in 1921.

A very beautiful tree when flowering. It appears to thrive in shade.

Introduced in 1851.

AESCULUS OCTANDRA Marshall. Sweet Buckeye. South-eastern United States.

Loudon, i. 471 (as *Pavia flava*); Sargent, Silva, ii. 59, tt. 69, 70 (1892); Elwes and Henry, ii. 224 (1908); Bean, i. 172 (1914).

Pleasure Grounds. No. 1362, on new ground.

Park. No. 1464, near Petticoat Cutting. A small tree.

Introduced in 1764.

AESCULUS PARVIFLORA Walter. (*Pavia macrostachya* Walter.) South-eastern United States.

Bot. Mag., t. 2118 (1820) (as *Aesculus macrostachya*); Bean, i. 173 (1914).

ARBORETUM. No. 199 in the Main Drive is a particularly fine specimen, 12 ft. high with a spread of 23 ft. In spring the bronzy tint of the unfolding young leaves is very marked. In August, when covered with its panicles of white flowers, it is a strikingly handsome shrub, the thread-like stamens projecting far beyond the petals (Plate 12). The flowers have an extraordinary attraction for butterflies, and are at times almost covered with 'Red Admirals' and 'Commas'. In autumn the whole plant turns lemon-yellow.

A large plant, 25 ft. high, formerly stood in the Straight Drive, but this was cut down some years ago.

Entrance to Arboretum. Young plant put out 1923.

SILKWOOD. Willesley Drive.

Introduced in 1785.

AESCULUS TURBINATA Blume. Japanese Horse Chestnut.

Elwes and Henry, ii. 221 (1908); Bean, i. 174 (1914); Bot. Mag., t. 8713 (1917).

ARBORETUM. No. 342 in the Down Cover has attained a height of 48 ft. by 3 ft. 6 in., and is one of the best specimens in cultivation. No. 146 in the Main Drive, a seedling from the old tree in the Pleasure Ground, is 24 ft. high by 1 ft. 2 in. Young tree planted in 1923.

PLEASURE GROUNDS. No. 1241 on the lawn has also made splendid growth, being now 38 ft. by 3 ft. (Plate 13). It has now flowered regularly for several years, and also produces a fair number of nuts from which many seedlings have been raised. The figure in the *Botanical Magazine* was drawn from a specimen taken by Mr. Bean from this tree, which differs somewhat in foliage from the tree in the Arboretum. The leaves turn an amber colour in autumn, before becoming brown. It was planted by the late Mr. Holford about 1883.

The leaves of *Aesculus turbinata* resemble those of the common horse chestnut, but are larger and more regularly toothed. The flowers are produced two or three weeks later than the common species, and the pear-shaped fruits are spineless.

The date of introduction into cultivation is uncertain, but it was probably about forty-five years ago.

AESCULUS PARVIFLORA

In Arboretum

AESCULUS TURBINATA

In Pleasure Grounds

AESCULUS VERSICOLOR Dippel. (*A. octandra* × *A. Pavia.*) Hybrid origin.

Elwes and Henry, ii. 224 (1907).

ARBORETUM. No. 308 in Victory Glade, a tree with pinkish flowers. A tree opposite the Down Pool has yellowish to pink flowers. Another tree in a clump near the entrance to the Arboretum.

This hybrid and *Aesculus carnea* were at their best during the last days of May 1922, when they gave a particularly fine display.

AILANTHUS GLANDULOSA Desfontaines. (Family SIMARUBACEAE.) Tree of Heaven.[1] North China.

Loudon, i. 490 (1838); Elwes and Henry, i. 30 (1906); Bean, i. 174 (1914)

There are exceptionally fine trees at Westonbirt.

PLEASURE GROUNDS. The largest tree in the garden appears to be No. 1438, standing in a shrubbery near the Sunken Garden, and measuring 82 ft. by 8 ft. Near the house there is another good specimen (No. 1247) which is 77 ft. by 7 ft. Another (No. 1416) on the Terrace is 70 ft. by 8 ft. 5 in. (Plate 14).

PARK. No. 1454, near the Stable Clump, is 85 ft. by 6 ft. 5 in.

Several of the *Ailanthus* trees at Westonbirt were full of fruit in the exceptional autumn of 1921, and the masses of reddish-brown 'keys' conspicuous among the green foliage produced a most ornamental effect. The younger trees fruit as freely as the older ones.

Var. *pendulifolia* Carrière.

Cross Ride opposite the Down Pool.

The species were introduced into cultivation in 1751.

AILANTHUS VILMORINIANA Dode. W. China.

Bean, i. 175 (1914).

ARBORETUM. No. 217 at Clay Island, a plant about 6 ft. high, which grows very slowly, being apparently not hardy.

Introduced since 1897.

[1] This name is more properly applied to a tall tropical species, *Ailanthus moluccana*, than to *A. glandulosa*.

ALNUS CORDATA Desfontaines. Italian Alder. (Family BETULACEAE.) Corsica, Southern Italy.

Loudon, iii. 1689 (1838); Elwes and Henry, iv. 949 (1909); Bean, i. 179 (1914).

PARK. A fair-sized tree (No. 1467) near Pickard's lodge.

SILKWOOD. A very fine tree (No. 733) near the Willesley Drive entrance is 69 ft. by 4 ft. 6 in., and in excellent health.

A very distinct alder, the foliage, which resembles that of a lime, remaining on the tree till late in autumn.

Introduced, according to Loudon, in 1820.

ALNUS GLUTINOSA Gaertner. Common Alder. Europe, Siberia, Western Asia, North Africa.

Loudon, iii. 1678 (1838); Elwes and Henry, iv. 937 (1909); Bean, i. 181 (1914).

Var. *laciniata* Willd.

PARK. No. 1465, in hedge outside Pickard's lodge, is a good specimen, 71 ft. by 8 ft.

SILKWOOD. No. 465 in the Broad Drive, measuring 40 ft. by 3 ft. 1 in.

ALNUS INCANA Moench. Grey Alder. Europe, Caucasus.

Loudon, iii. 1687 (1838); Elwes and Henry, iv. 945 (1909); Bean, i. 182 (1914).

Var. *aurea* Schelle.

SILKWOOD. No. 698, a small tree in the Willesley Drive.

The species was introduced in 1780.

ALNUS OREGONA Nuttall. Western North America.

Sargent, Silva, ix. 73, t. 454 (1896); Elwes and Henry, iv. 956 (1909) (as *A. rubra*); Bean, i. 183 (1914).

ARBORETUM. Two young trees, received from Dawyck, planted in the Pool Avenue in 1922.

Introduced into cultivation more than forty years ago.

ALNUS SITCHENSIS Sargent. Western North America.

Bean, i. 184 (1914).

ARBORETUM. Straight Drive, young trees recently planted.

Introduced in 1903.

AILANTHUS

In Pleasure Grounds

AMELANCHIER ALNIFOLIA Nuttall. (Family ROSACEAE.) Western North America.

Bean, i. 186 (1914).

ARBORETUM. Four young specimens planted near the Down Pool in 1922.

Introduced by Douglas in 1826, but still one of the rarest of the Amelanchiers.

AMELANCHIER CANADENSIS Medicus. Service Berry. June Berry. Eastern and Central North America.

Bean, i. 188 (1914).

ARBORETUM. Group of plants at edge of Wigmore Bottom.

SILKWOOD. Good specimens in the Broad Drive and Willesley Drive.

A very effective spring flowering shrub, though the blossoms are soon past their best. The rich red colour of the foliage in autumn is very noticeable.

Introduced, according to Aiton, in 1746.

ARALIA CHINENSIS Linnaeus. Chinese Angelica Tree. (Family ARALIACEAE.) China, Japan, Manchuria.

Bean, i. 197 (1914).

PLEASURE GROUNDS. No. 1228, near the Pergola.

SILKWOOD. No. 645, in the Willesley Drive.

Introduced about 1865.

ARAUCARIA IMBRICATA Pavon. Chile Pine. Monkey Puzzle. (Family PINACEAE.) Chile.

Loudon, iv. 2432 (1844); Elwes and Henry, i. 44 (1906); Clinton-Baker, ii. 68 (1909).

ARBORETUM. Specimen Avenue, a tree about 50 ft. high, and Down Cover, where there is a fine healthy specimen 61 ft. by 4 ft. 10 in. There are also two smaller trees at Clay Island.

PLEASURE GROUNDS. Sunken Garden, and near lake.

The Chile Pine, which, although a tree of no beauty, is one of the best-known conifers in the British Isles, is of special interest from the

fact that it is the only South American tree which has attained timber-producing size in this country. It was discovered by a Spaniard about 1780, and introduced into cultivation by Archibald Menzies about fifteen years later.

ARBUTUS ANDRACHNE Linnaeus. (Family ERICACEAE.) South-eastern Europe.

Bot. Mag., t. 2024 (1819); Loudon, ii. 1120 (1838); Elwes and Henry, iii. 564 (1908); Bean, i. 201 (1914).

A young plant of *A. Andrachne* raised from seed from Gallipoli was received in a pot from Colesborne in October 1920.

Introduced into cultivation in 1724, but rarely seen in gardens.

ARBUTUS MENZIESII Pursh. Madrona. California.

Loudon, ii. 1121 (1838) (as *A. procera*); Sargent, Silva, v. 123, t. 231 (1893); Elwes and Henry, iii. 565 (1908); Bean, i. 201 (1914).

ARBORETUM. Down Cover, young plants, put out in 1921.

PLEASURE GROUNDS. The old tree (No. 1410) on the Terrace, measuring 37 ft. by 6 ft. 4 in., is one of the best specimens in cultivation.[1] It is declining rapidly, however. It produced fruit in the autumn of 1921. No. 1381, near the bastion, is a smaller tree, 35 ft. by 4 ft. at 1 ft. from the ground. Planted about 1878.

This is one of our most picturesque evergreen trees, with its remarkably smooth cinnamon-coloured bark, which peels off in paper-like scales. It is rather a rare tree in cultivation, although introduced by Douglas as long ago as 1827.

ARBUTUS UNEDO Linnaeus. Strawberry Tree. Mediterranean region and South-west Ireland.

Loudon, ii. 1117 (1838); Syme, Eng. Bot., vi. 28, t. 882 (1866); Elwes and Henry, iii. 559 (1908).

ARBORETUM. No. 821 in the Main Drive. No. 928 at Wigmore Bottom.

PLEASURE GROUNDS. No. 1211 at back of stables. A very old specimen on the bank above the Sunken Garden.

[1] Recorded by Elwes and Henry as *A. Andrachne*.

One of the most beautiful of our native shrubs, especially when producing its strawberry-like fruits.

Var. *microphylla* Hort.

Gard. Chron., 18 Oct. 1884, p. 492.

A small plant in the Old Nursery.

Var. *rubra* Aiton.

Old Nursery, two plants.

ARUNDINARIA ANCEPS Mitford. Ringal. (Family GRAMINEAE.)

North-west Himalaya.

Bean, i. 213 (1914).

ARBORETUM. Bamboo collection, Down Cover.
PLEASURE GROUNDS. Stable yard.
SILKWOOD. Sand Earth Corner.
A handsome and graceful species introduced in 1865.

ARUNDINARIA FASTUOSA Makino. Japan.

Bean, i. 215 (1914).

ARBORETUM. Bamboo collection, Down Cover.
PLEASURE GROUNDS. Back of stables.
Introduced in 1892.

ARUNDINARIA JAPONICA Siebold. Medake. Japan.

Bean, i. 216 (1914).

ARBORETUM and PLEASURE GROUNDS.
Introduced in 1850.

ARUNDINARIA NITIDA Mitford. Central and West China.

Bean, i. 217 (1914).

ARBORETUM. Bamboo collection, Down Cover. An unusually fine clump.

PLEASURE GROUNDS. Fine clumps 10 ft. high by lake and in stable yard.

Silkwood. Sand Earth Corner.

This is the most satisfactory bamboo for shelter purposes, making dense clumps, 15 to 18 ft. high.

Introduced in 1889.

ARUNDINARIA PALMATA Bean. Japan.

Bean, i. 218 (1914).

Arboretum. Down Cover.

Introduced about 1889.

ARUNDINARIA VEITCHII N. E. Brown. Japan.

Bean, i. 220 (1914).

Arboretum.

Introduced about 1880.

AZARA MICROPHYLLA Hooker fil. (Family Bixaceae.) Chile.

Bean, i. 230 (1914).

In the Arboretum and Pleasure Grounds specimens have reached 15 ft. in height. A form with variegated foliage is growing on the wall of one of the glass-houses.

An elegant shrub, with inconspicuous but delightfully fragrant flowers produced in early spring. It is fairly hardy, and seldom damaged by frost in this district.

Introduced in 1861.

BERBERIS ACTINACANTHA Martius. (Family Berberidaceae.) Chile.

Bot. Reg., vol. xxxi, t. 55 (1845); Bean, i. 233 (1914).

Pleasure Grounds. Planted with other barberries in beds near the Church.

BERBERIS ACUMINATA Veitch. Central China. (Syn. *B. Veitchii* Schneider.)

Bean, i. 234 (1914).

Pleasure Grounds.

Introduced into cultivation in 1900.

BERBERIS AGGREGATA Schneider. China.

Pl. Wils., i. 375 (1913).

Arboretum and Pleasure Grounds.

Introduced in 1904.

BERBERIS ARISTATA De Candolle. Himalaya.

Bean, i. 235 (1914); Bot. Reg., t. 729 (1823).

Arboretum and Pleasure Grounds.

One of the most ornamental of the deciduous barberries. It includes a large number of forms.

A hedge of it has been made on one side of the Old Nursery.

BERBERIS ATROCARPA Schneider. China.

Bot. Mag., t. 8857 (1920); Pl. Wils., iii. 437 (1917).

Pleasure Grounds. No. 1309 near the boat-house. This is a black-fruited species closely allied to *B. levis*, under which name the seed was distributed.

BERBERIS BRACHYPODA Maximowicz. Western Hupeh, China.

Pl. Wils., i. 375 (1913).

Young plant in Orchid Nursery.

Introduced since 1913.

BERBERIS CANDIDULA Schneider. China.

Bean i. 237 (1914).

Orchid Nursery.

Pleasure Grounds.

Introduced since 1900.

BERBERIS CONCINNA Hooker fil. Sikkim Himalaya.

Bot. Mag., t. 4744 (1853); Bean, i. 238 (1914).

Walk under high-road Archway.

Arboretum. Several clumps.

Introduced about 1850.

BERBERIS BREVIPANICULATA Bean. Western China.

Bean, i. 236 (1914).

ARBORETUM. A group of 100 plants put out in Pool Avenue in 1924 with *B. virescens*.

PLEASURE GROUNDS.

Large batches of this barberry have been raised from seed; it is one of the best fruited varieties.

BERBERIS DARWINI Hooker. Chile.

Bot. Mag., t. 4590 (1851); Bean, i. 238 (1914).

Planted freely in Pleasure Grounds and woods.

ARBORETUM. There are exceptionally fine plants in the Main Drive and elsewhere; they make a magnificent show in the spring when loaded with masses of golden blossoms, and their clusters of plum-coloured berries contrasted with the glossy foliage make an equally effective show in autumn. One of the handsomest evergreen shrubs in cultivation. Discovered by Charles Darwin in 1835 during the voyage of the *Beagle*, and introduced in 1849.

BERBERIS DICTYOPHYLLA Franchet. China.

Bot. Mag., t. 7833 (1902); Bean, i. 239 (1914).

ARBORETUM. Clay Island.

Walk under Archway.

PLEASURE GROUNDS.

Introduced in 1897.

BERBERIS FORTUNEI Lindley. (*Mahonia Fortunei* Fedde.) China.

Bean, i. 240 (1914).

ARBORETUM. A small plant at Clay Island.

Introduced in 1846.

BERBERIS GAGNEPAINI Schneider. Western China.

Bot. Mag., t. 8185 (1908) (as *B. acuminata*); Bean, i. 241 (1914).

PLEASURE GROUNDS. The best specimen (No. 1166), planted in

BERBERIS GAGNEPAINI

In Pleasure Grounds

BERBERIS PINNATA

In Pleasure Grounds

1911, is now 7 ft. high (Plate 15), and another in the Sunken Garden is nearly as good.

A very distinct and attractive barberry introduced by Wilson about 1904.

BERBERIS HAKEOIDES Schneider. Chile.

Bot. Mag., t. 6770 (1884) (as *B. congestiflora* var. *hakeoides*); Bean, i. 241 (1914).

Between the gardener's cottage and the glass-houses. Very rarely seen in gardens.

BERBERIS HOOKERI Lemaire. (*B. Wallichiana* Hort.) Himalaya.

Bean, i. 243 (1914).

Frequent.

BERBERIS JAPONICA R. Brown. China, Japan.

Bean, i. 244 (1914).

Var. *Bealei* Fortune.

Arboretum and Pleasure Grounds.

BERBERIS JULIANAE Schneider. Western China.

Pl. Wils., i. 360 (1913).

Pleasure Grounds.

BERBERIS LEICHTENSTEINII Schneider. China.

Pl. Wils., ii. 379 (1913).

Pleasure Grounds. Plant in bed near the churchyard wall put out in 1923.

BERBERIS PINNATA Lagasca. (*Mahonia fascicularis* De Candolle.) Western North America.

Bot. Mag., t. 2396 (1823) (as *B. fascicularis*); Bean, i. 246 (1914).

An unusually fine plant grows on the south wall of the Italian Garden. The foliage is of an exceptionally glaucous tint (Plate 16).

Introduced in 1819.

BERBERIS POLYANTHA Hemsley. Western China.

Bean, i. 246 (1914).

Large batches raised for Arboretum, Silkwood, and Pleasure Grounds.

BERBERIS PRATTI Schneider. Western China. (*B. aggregata* var. *Prattii* Schneider.)

Bot. Mag., t. 8549 (1914); Bean, i. 236 (1914).

Walk under Archway.
Pleasure Grounds.
Introduced by Wilson in 1904.
One of the most beautiful of the genus in fruit, though the habit is inferior.

BERBERIS PRUINOSA Franchet. China.

Bean, i. 246 (1914).

Pleasure Grounds.
Walk under Archway and elsewhere.

BERBERIS REGELIANA Koehne. Japan.

Bean, i. 248 (1914).

Arboretum. Down Cover.

BERBERIS REPLICATA W. W. Smith. Western China.

Notes, Roy. Bot. Gard. Edinb., xi. 200 (1919).

Arboretum. Young plants in Down Cover received from Woburn (Forrest Collection).
Introduced about 1917.

BERBERIS RUBROSTILLA Hort.

Gard. Chron., Dec. 1, 1917, p. 218.

Arboretum. Wigmore Clump.

BERBERIS SANGUINEA Franchet. Szech'uan, China.

Bean, i. 247 (1914).

ARBORETUM. Down Cover.

BERBERIS SARGENTIANA Schneider. China.

Bean, i. 247 (1914).

ARBORETUM and PLEASURE GROUNDS.

BERBERIS SIEBOLDII Miquel. China and Japan.

Bean, i. 248 (1914).

ARBORETUM. Wigmore Clump.

BERBERIS SINENSIS Desfontaines. China, Corea.

Bean, i. 248 (1914).

ARBORETUM. Wigmore Clump.
Introduced in 1800.

BERBERIS STAPFIANA Schneider. Western China.

Bean, i. 249 (1914).

Has been largely planted in the Pleasure Grounds and elsewhere. Numerous plants have been raised from seed. Introduced from St. Petersburg in 1896. Unlike most of the genus, when raised from seed in this country the seedlings appear to come true.

BERBERIS STENOPHYLLA Schneider. (*B. Darwini* × *empetrifolia.*)

Bean, i. 249 (1914).

A hybrid barberry which first appeared in a Sheffield nursery in 1860. One of the most beautiful of all flowering shrubs and has been largely planted at Westonbirt.

Var. *diversifolia* Hort.

PLEASURE GROUNDS. Shrubbery near the Church.

Var. *Irwini* Hort.

ARBORETUM and PLEASURE GROUNDS.

BERBERIS SUBCAULIATA Schneider. China.

Bean, i. 249 (1914) (as *B. Coryi*, Veitch).

Pleasure Grounds and elsewhere.

Numerous seedlings have been raised at Westonbirt. This barberry resembles *B. Stapfiana* in habit, but has rounder fruits, which ripen in November, and larger leaves which are glaucous beneath. It is also allied to *B. Wilsonae*.

BERBERIS THIBETICA Schneider. Western China.

Pl. Wils., i. 369 (1913).

Kitchen Garden Nursery.

BERBERIS THUNBERGI De Candolle. Japan.

Bean, i. 250 (1914).

Pleasure Grounds.

Near the lake there is a plant 9 ft. high and over 40 ft. in circumference (Plate 17). When the foliage turns a brilliant red tint in October the colour effect is exceptionally fine.

Silkwood. Plants have been very effectively massed between the Waste Gate and the Central Ride.

Introduced about 1870.

BERBERIS VERRUCULOSA Hemsley and Wilson. Western China.

Bot. Mag., t. 8454 (1912); Bean, i. 251 (1914).

Arboretum. Wigmore Field.

Pleasure Grounds.

A handsome evergreen introduced by Wilson in 1904.

BERBERIS VIRESCENS Hooker fil. Sikkim.

Bot. Mag., t. 7116 (1890); Bean, i. 251 (1914).

Arboretum. Frequent. Pool Avenue and elsewhere.

Pleasure Grounds.

Old Nursery, where a number of plants have made vigorous growth.

BERBERIS THUNBERGI

In Pleasure Grounds

PLATE 17

One of the very best autumn colourers.
Introduced about 1850.

BERBERIS VULGARIS Linnaeus. Common Barberry. Europe, North Africa, Temperate Asia.

There are exceptionally fine plants of this well-known shrub at Westonbirt; one in Silkwood at the west end of the Broad Drive is no less than 18 ft. high, 22 ft. through, and 40 ft. in circumference.

Var. *asperma* Hort.
Orchid Nursery.

Var. *atropurpurea* Regel.
Has been largely planted in the Pleasure Grounds, where its deep purple foliage is most effective.

BERBERIS WILSONAE Hemsley. Western China.
Bot. Mag., t. 8414 (1912); Bean, i. 252 (1914).

A great favourite at Westonbirt. It is undoubtedly one of the prettiest of the Chinese deciduous barberries, especially when well fruited, and has become one of the most popular of the Chinese shrubs since its introduction in 1904 by Wilson, after whose wife it is named. It varies extraordinarily when raised from seed, and is shrewdly suspected of being a Chinese natural hybrid.

BETULA ALBO-SINENSIS Burkill. (Family Betulaceae.) Western China.
Elwes and Henry, iv. 981 (1909) (as *B. utilis* var. *albo-sinensis*, Winkler).

Young plants in Rattray's Nursery, raised from Wilson's seed, collected near Wen-ch'uan Hsien, alt. 2,600–3,600 m., in 1910.

Var. *septentrionalis* Schneider. Western Szech'uan, China.

Silkwood. Young plant in Sand Earth Corner, raised from seed collected by Wilson north-east of Tachien-lu, alt. 3,000–3,600 m., in 1908 (No. 900).

The bark of this species is singularly beautiful, being of a bright orange or orange-red colour.

BETULA DELAVAYI Franchet. Western Szech'uan, China.

Pl. Wils., ii. 460 (1916).

Var. *Forresti* W. W. Smith. Yunnan.

Notes Royal Bot. Gard. Edinb., viii. 332 (1915); Pl. Wils., ii. 479 (1916).

Young plants received from Woburn in 1923 and planted in Victory Glade (Forrest Collection, 1917 seed).

BETULA ERMANI Chamisso. Manchuria, Corea, Japan.

Elwes and Henry, iv. 977 (1909); Bean, i. 256 (1914).

Arboretum. The well-known tree, No. 138 in the Main Drive, is the best in cultivation. It was planted about 1875, and when measured by Elwes in 1908 was 51 ft. high by 2 ft. 6 in. in girth. In 1920 we made it 62 ft. by 3 ft. 3 in. (Plate 18). Large numbers of seedlings have been raised.

The creamy white bark is a very striking feature of this tree, and peeling off, as it often does, in broad bands, can be used for writing upon.

Silkwood. No. 532 in the Willesley Drive, named *B. costata* and measuring 35 ft. by 2 ft. 5 in., appears to be identical with *B. Ermani.*

BETULA JAPONICA Siebold. Eastern Asia, Manchuria, Saghalien, Japan.

Elwes and Henry, iv. 967 (1909).

Var. *szechuanica* Schneider.

Pl. Wils., iii. 454 (1917).

Arboretum.

Small trees raised from Wilson's seed are in the Straight Drive, Middle Ride, and elsewhere.

BETULA LENTA Linnaeus. Cherry Birch. Eastern North America.

Loudon, iii. 1713 (1838); Sargent, Silva, ix. 50, t. 448 (1896); Elwes and Henry, iv. 991 (1909); Bean, i. 258 (1914).

Silkwood. Young plants in the Kitchen Garden Nursery.

The young bark when bruised is remarkably aromatic, and the species can at once be identified by this character.

Introduced, according to Aiton, in 1759.

BETULA ERMANI

In Arboretum

BETULA LYALLIANA Koehne. British Columbia, Washington.

Sargent, Silva, xiv. 57, t. 725 (1902) (as *B. occidentalis*); Elwes and Henry, iv. 984 (1914) (as *B. papyrifera* var. *Lyalliana*); Bean, i. 258 (1914).

Arboretum. Two young trees received from Dawyck were planted in Victory Glade in 1922.

Silkwood. Willesley Drive.

A very fine birch, which reaches a height of over 100 ft. in its native localities; it is making vigorous growth in this country, where it seems likely to prove an attractive tree.

Introduced about 1907.

BETULA MAXIMOWICZI Regel. Japan.

Elwes and Henry, iv. 976 (1909); Bot. Mag., t. 8337 (1910); Bean, i. 259 (1914).

Arboretum. No. 294 in Pool Avenue is a tree about 15 ft. high. Young trees 20 ft. high in Victory Glade.

Old Nursery. A tree 30 ft. high, about twenty years planted.

Silkwood. Two trees about 10 ft. high near the Waste Gate.

A very distinct and beautiful birch, with male catkins often 5 in. long and leaves 6 in. or more long.

Introduced by Sargent in 1893.

BETULA MEDWEDIEWII Regel. Caucasus.

Bean, i. 259 (1914).

Young plant in Orchid Nursery.

BETULA PAPYRIFERA Marshall. Paper-Birch. North America.

Loudon, iii. 1708 (1838) (as *B. papyracea*); Elwes and Henry, iv. 983 (1909); Bean, i. 260 (1914).

Park. One of the largest paper-birches in England is the tree (No. 1442) at the back of the gardener's house, its measurements being 75 ft. by 5 ft. in 1921. The date of planting is unknown.

Silkwood. Two trees in the Willesley Drive; one (No. 530, labelled *B. papyrifera*, var. *latifolia*) is 40 ft. by 3 ft. 3 in., and the other (No. 531) 38 ft. by 2 ft. 3 in.

Introduced, according to Loudon, in 1750.

VETERINARY

BETULA SCHMIDTII Regel. Corea, Japan.

Pl. Wils., ii. 475 (1916).

Young plants in Kitchen Garden Nursery.

BETULA UTILIS D. Don. Himalaya, Western China.

Elwes and Henry, iv. 980 (1909); Bean, i. 263 (1914).

ARBORETUM. Small plants in the Down Cover.

Four young plants received from Woburn (Forrest 1917 seed) in 1923.

Introduced by Sir Joseph Hooker in 1849, but has not proved a success, being apparently not hardy. The Chinese form may prove a better doer.

A form with reddish-brown bark (Forrest, 15381) planted in the Middle Ride in 1924.

BETULA VERRUCOSA Ehrhart. (*B. alba* Linn. in part.) Silver Birch. Europe, Asia.

Loudon, iii. 1691 (1838) (as *B. alba* var. *pendula*); Elwes and Henry, iv. 966 (1909); Bean, i. 263 (1914).

Frequent in plantations. There is an exceptionally fine tree in the Pleasure Grounds near the large Deodar, measuring about 70 ft. by 5 ft. 10 in.

Var. *Youngi* Schneider.

ARBORETUM. Small trees in the Straight Drive.

PLEASURE GROUNDS. Two small trees, Nos. 1259 and 1265.

SILKWOOD. No. 728 in the Willesley Drive.

Var. *fastigiata* Schnelle.

SILKWOOD. No. 726 in the Willesley Drive.

Var. *purpurea* Hort.

PLEASURE GROUNDS. No. 1300, near the boat-house.

BETULA WILSONI Bean. Western China.

Bean, i. 264 (1914); Pl. Wils., ii. 460 (1916) (as *B. Potanini* Batalin).

ARBORETUM. Victory Glade, planted 1922.

PLEASURE GROUNDS. Planted 1922.

A very distinct shrubby birch, with many-veined leaves, covered below with a brownish silky pubescence.

Introduced by Wilson in 1909.

BUDDLEIA ALTERNIFOLIA Maximowicz. (Family LOGANIACEAE.) China.

A very distinct and beautiful shrub, which produces pendulous racemes of handsome mauve flowers. Two plants collected by Farrer in China, and received at Westonbirt through Mr. Cory, flowered freely in 1921.

ARBORETUM. Middle Ride, planted 1924.

BUXUS MICROPHYLLA Siebold. (Family EUPHORBIACEAE.) Japan.

Bean, i. 277 (1914).

Var. *koreana* Wilson. Corea.

Kitchen Garden Nursery.

BUXUS SEMPERVIRENS Linnaeus. Common Box. Europe, North Africa, Western Asia.

Elwes and Henry, vii. 1724 (1913); Bean, i. 277 (1914).

Frequent.[1]

Var. *myrtifolia* Loudon.

CAESALPINIA JAPONICA Siebold. (Family LEGUMINOSAE.) Japan, China.

Bot. Mag., t. 8207 (1908); Bean, i. 279 (1914).

ARBORETUM. No. 274, near Acer Grove.

Introduced before 1887.

[1] One of the three box woods mentioned in Domesday Book is at Boxwell, a few miles away, belonging to the old family of Huntley.

CALYCANTHUS FERTILIS Walter. (Family CALYCANTHACEAE.) South-east United States.

Bot. Reg., t. 404 (1819); Bean, i. 283 (1914).

PLEASURE GROUNDS. No. 1305, east side of lake.
Introduced in 1806.

CALLICARPA JAPONICA Thunberg. (Family VERBENACEAE.) Japan.

Bean, i. 280 (1914).

SILKWOOD.

CAMELLIA JAPONICA Linnaeus. (Family TERNSTROEMIACEAE.) Japan, China.

Bean, i. 284 (1914).

Hardy at Westonbirt, where there are small plants in the Arboretum and elsewhere.
Introduced about 1700.

CARAGANA ARBORESCENS Lamarck. Pea Tree. (Family LEGUMINOSAE.) Siberia.

Bean, i. 287 (1914).

Var. *pendula* Dippel.

PLEASURE GROUNDS. No. 1363.
Introduced in 1752.

CARPENTARIA CALIFORNICA Torrey. (Family SAXIFRAGACEAE.) California.

Bot. Mag., t. 6911 (1886); Bean, i. 292 (1914).

PLEASURE GROUNDS. No. 1182, on wall of bastion.
Introduced about 1880; a very handsome shrub when in flower.

CARPINUS BETULUS Linnaeus. Common Hornbeam. (Family BETULACEAE.) Europe, Asia Minor.

Loudon, iii. 2004 (1838); Elwes and Henry, iii. 532 (1908); Bean, i. 294 (1914).

PARK. No. 1433 a, a tree on the edge of the clump opposite Wigmore Bottom, has unusually large leaves and measures 60 ft. by 5 ft.

Var. *albo-variegata* Hort.

SILKWOOD.

Var. *quercifolia* Desfontaines.

ARBORETUM. Young plants in the Down Cover.

CARPINUS CAROLINIANA Walter. American Hornbeam. Eastern North America.

Loudon, iii. 2013 (1838); Sargent, Silva, ix. 42, t. 447 (1896); Elwes and Henry, iii. 531 (1908); Bean, i. 295 (1914).

PLEASURE GROUNDS. A small tree, No. 1298, on the south side of the lake measuring about 18 ft. high.

The foliage closely resembles that of the common hornbeam, but the leaves turn a beautiful scarlet tint in autumn.

Introduced in 1812, but rarely seen in gardens.

CARPINUS LAXIFLORA Blume. China, Japan.

Elwes and Henry, iii. 530 (1908).

Var. *macrostachya* Oliver. Western Hupeh.

Hooker, Icon., Pl. XX, t. 1989 (1891).

ARBORETUM. Main Drive; planted 1922. The plant received from Aldenham.

CARPINUS YEDOENSIS Maximowicz. Central China.

Elwes and Henry, iii. 529 (1908); Bean, i. 297 (1914).

ARBORETUM. Small plants in the Down Cover.

This species, which has long been grown in Japan, was introduced into European cultivation in 1901.

CARYA ALBA Nuttall. Shagbark. (Family JUGLANDACEAE.) Eastern North America.

Loudon, iii. 1446 (1838); Sargent, Silva, vii. 153, tt. 346, 347 (1895) (as *Hicoria ovata*); Bean, i. 299 (1914).

SILKWOOD. Two trees, Nos. 450 and 455, in the hickory collection by the Centre Ride.

PLEASURE GROUNDS. A good specimen (No. 1371) in a shrubbery in the new ground measuring 40 ft. by 2 ft.

Introduced early in 1600.

CARYA AMARA Nuttall. Bitter Nut. Eastern North America.

Loudon, iii. 1443 (1838); Sargent, Silva, vii. 141, tt. 340, 341 (1895) (as *Hicoria minima*); Elwes and Henry, iii. 600 (1908); Bean, i. 299 (1914).

SILKWOOD. Two small trees, Nos. 453 and 456 (Plate 19), in the hickory collection by the Broad Ride. The first of these was originally called *C. sulcata*.

Introduced in 1766.

CARYA PORCINA Nuttall. Pignut. Eastern North America.

Loudon, iii. 1449 (1838); Sargent, Silva, vii. 165, tt. 352–5 (as *Hicoria glabra*); Elwes and Henry, iii. 604 (1908); Bean, i. 300 (1914).

ARBORETUM. A small tree (No. 230) at Clay Island. The leaves turn a rich yellow in autumn.

PARK. A small specimen (No. 1477) in the Garden Plantation.

SILKWOOD. No. 458 in the Centre Ride is the best hickory on the estate, and measures 51 ft. by 2 ft. 4 in. In October, when the foliage turns a butter-yellow colour, it is a very striking object (Plate 20).

Introduced in 1799.

CASSINIA FULVIDA Hooker fil. (Family COMPOSITAE.) New Zealand.

Bean, i. 304 (1914).

PLEASURE GROUNDS. Rockery.

CARYA AMARA

In Silkwood

CARYA PORCINA

In Silkwood

CASTANEA DENTATA Borkhausen. *C. americana* Rafinesque. (Family FAGACEAE.) Eastern North America.

Loudon, iii. 1984 (1838) (as *C. vesca* var. *americana*); Sargent, Silva, ix. 13, tt. 400, 441 (1896); Elwes and Henry, iv. 856 (1908); Bean, i. 307 (1914).

DOWNS. No. 362, near the Ice House Gate, an old specimen 32 ft. by 2 ft. 6 in., has been struck by lightning and is now badly decayed in the stem.

The American chestnut is very rare in cultivation.

Date of introduction not recorded.

CASTANEA SATIVA Miller. Spanish or Sweet Chestnut. Southern Europe, North Africa, Asia Minor.

Loudon, iii. 1983 (1838); Elwes and Henry, iv. 839 (1909); Bean, i. 308 (1914).

ARBORETUM.

Var. *laciniata* Hort.

SILKWOOD. No. 661, a tree 38 ft. 6 in. by 2 ft. 9 in., in the Willesley Drive.

The sweet chestnut was probably introduced into England by the Romans.

CATALPA BIGNONIOIDES Walter. Indian Bean. (Family BIGNONIACEAE.) Eastern United States.

Loudon, iii. 1261 (1838); Bot. Mag., t. 1094 (1808) (as *C. syringifolia*); Sargent, Silva, vi. 86, tt. 288, 289 (1894) (as *Catalpa Catalpa*); Elwes and Henry, vi. 1485 (1912); Bean, i. 311 (1914).

ARBORETUM. No. 92, a small tree in the Main Drive.

PLEASURE GROUNDS. No. 1333, a tree 27 ft. by 3 ft. 3 in. near the lake.

Introduced in 1726.

CATALPA FARGESI Bureau. W. China.

Elwes and Henry, vi. 1490 (1912); Bean, i. 312 (1914).

ARBORETUM. Nos. 207 and 208,[1] planted about 1916, in the Specimen Avenue; one is 24 ft. 6 in. high by 1 ft. in girth. A third speci-

[1] Moved to Wigmore Bottom in 1925.

men (No. 209), now between the end of the Broad Ride and Loop Walk, was moved here from the Specimen Avenue in 1923.

Old Nursery. Two trees.

Introduced by Wilson in 1901.

CATALPA KAEMPFERI Siebold and Zuccarini. China.

Bot. Mag., t. 6611 (1882); Elwes and Henry, vi. 1487 (1912); Bean, i. 313 (1914) (as *C. ovata* G. Don).

Var. *purpurea* Hort.

Arboretum. No. 306, a small tree in Victory Glade.

Introduced into Europe in 1849.

CEANOTHUS PAPILLOSUS Torrey. (Family Rhamnaceae.) California.

Bot. Mag., t. 4815 (1854); Bean, i. 318 (1924).

Young plants added 1924–5.

Introduced about 1850.

CEANOTHUS RIGIDUS Nuttall. Central and South California.

Bot. Mag., t. 4664 (1852); Bean, i. 319 (1914).

Added 1925.

Introduced in 1847.

CEANOTHUS VEITCHIANUS Hooker. California.

Bot. Mag., t. 5127 (1859); Bean, i. 320 (1914).

Arboretum. Main Drive by Clay Island opening, planted 1925.

A very handsome wall shrub.

Introduced about 1853.

CEDRELA SINENSIS Jussieu. Chinese Cedar. (Family Meliaceae.) North and West China.

Elwes and Henry, ii. 433 (1907); Bean, i. 321 (1904).

Arboretum. An exceptionally fine specimen, No. 64 in the Straight Drive, is 55 ft. by 4 ft. 10 in., and is about 47 years old.

CEDRUS ATLANTICA

In Pleasure Grounds

CEDRUS ATLANTICA, var. GLAUCA

In Arboretum

Pleasure Grounds. A tree (No. 1213) at the east end of the house is 57 ft. by 4 ft. 2 in. It was much damaged by snow in 1914, when one half of the tree was broken away. It is thought to have been planted about 1875, soon after the house was completed.

These two trees are believed to be the finest in cultivation, but are not mentioned by Elwes and Henry. The Chinese Cedar was introduced into cultivation in 1862, but is seldom met with in gardens except in a young state. In Central China the tree is commonly cultivated and the young shoots are eaten after being fried in oil.

The foliage closely resembles that of the *Ailanthus*, but the leaves are without the glandular teeth characteristic of the Tree of Heaven, and the bark is quite distinct.

CEDRUS ATLANTICA Manetti. Atlas Cedar. (Family Coniferae.)
Algeria, Morocco.

Elwes and Henry, iii. 469 (1908); Clinton-Baker, i. 69 (1909); Dallimore and Jackson, 175 (1923).

Pleasure Grounds. The large tree on the lawn is believed to be one of the oldest in cultivation, having been planted in 1847. It is now 92 ft. by 11 ft. 8 in. It was raised from seed obtained from cones collected by Lord Somers about 1845 (Plate 21).

Var. *glauca* Carrière.

There are particularly handsome specimens of this beautiful conifer in the Park and Pleasure Grounds.

Arboretum. A fine specimen (No. 814) in the Main Drive is 85 ft. by 8 ft. (Plate 22.) Three young trees in the Straight Drive planted about 1909 are now 30 ft. and of a fine colour. No. 846 in the Lime Avenue is a tree 35 ft. high.

Park. The two trees opposite the great entrance to the house were planted by King Edward and Queen Alexandra in 1910, and are now 30 ft. by 2 ft. 7 in. and 23 ft. by 2 ft. respectively. A third specimen was planted when about 2 ft. high by Queen Mary during her stay at Westonbirt in August 1922.

Pleasure Grounds. A very fine tree on the lawn south of the house measures 57 ft. by 5 ft. and is believed to be one of the first specimens planted in this country. A smaller specimen, but equally

good in colour, is 49 ft. by 5 ft. 2 in. Another specimen planted in 1898 was 35 ft. by 3 ft. 4 in. in 1921. Near the Sunk Fence is a tree 52 ft. by 8 ft. 9 in. Another on the Terrace is 40 ft. by 4 ft. 5 in. No. 1318 near the lake is 36 ft. by 4 ft. at 4 ft. from the ground and was planted in 1898.

Introduced about 1845.

CEDRUS DEODARA Lawson. Deodar. Western Himalaya.

Loudon, iv. 2428 (1838); Clinton-Baker, i. 70 (1909); Elwes and Henry, iii. 476 (1908); Bean, i. 323 (1914); Dallimore and Jackson, 176 (1923).

Arboretum. No. 810 in the Main Drive, measuring 78 ft. by 7 ft., is the second largest deodar at Westonbirt. It was planted about 1870. There are several groups containing trees 70 ft. or more in height.

Pleasure Grounds. The very fine and shapely tree on the lawn near the end of the house is one of the oldest deodars in the country, having been planted by the late Mr. Holford about 1832, and was probably from one of the first batch of seedlings raised in this country (Plate 23). In 1907 it was 85 ft. by 8 ft. 9 in., and in 1920, 91 ft. by 9 ft. 10 in. No. 1401, on the Terrace by the bastion, was planted by the owner about 1897, and is now 39 ft. by 4 ft. 3 in.

Var. *robusta* Carrière.

Arboretum. No. 782 at the far end of the Straight Drive on the left is 43 ft. by 4 ft. 9 in.

The deodar was introduced by the Hon. Leslie Melville, who sent seeds from the Himalayas in 1831.

CEDRUS LIBANI Loudon. Lebanon Cedar. Syria.

Loudon, iv. 2402 (1828); Elwes and Henry, iii. 453 (1908); Clinton-Baker, i. 71 (1909); Bean, i. 324 (1914); Dallimore and Jackson, 178 (1923).

Pleasure Grounds. The best specimen at Westonbirt is the large tree on the lawn south of the house. In 1921 it was 87 ft. high by 15 ft. 3 in. The tree (No. 1400) by the bastion on the Top Terrace, known as Ball's cedar, was brought to its present position in a wheelbarrow by a gardener named Ball,[1] when a young man. The tree is

[1] Ball died Feb. 27, 1907, aged 89.

CEDRUS DEODARA

In Pleasure Grounds

now 76 ft. by 14 ft. 10 in. A fine-shaped cedar at the back of the courtyard, on the way to the stables, is 70 ft. high with a clean straight bole of 32 ft. and a girth of 9 ft. 6 in.

The date of introduction of the Lebanon cedar into England is uncertain, but it was probably not later than about 1675, as Evelyn appears to have received seeds from Mount Libanus about that time.

CELASTRUS ARTICULATUS Thunberg. (Family CELASTRACEAE.) North-east Asia.

Bean, i. 325 (1914).

ARBORETUM. Planted against a tree of *Cupressus macrocarpa* in Specimen Avenue.

Introduced in 1883.

CELASTRUS LATIFOLIUS Hemsley. China.

Bean, i. 326 (1914).

Walk under high-road Archway near Home Farm.

Introduced in 1900.

CELTIS DAVIDIANA Carrière. (Family ULMACEAE.) N. China.

Elwes and Henry, iv. 929 (1909); Bean, i. 328 (1914).

Old nursery. A small plant.

Introduced in 1882.

CEPHALOTAXUS DRUPACEA Siebold and Zuccarini. (Family TAXACEAE.) Japan.

Bot. Mag., t. 8285 (1909); Elwes and Henry, vi. 1469 (1913); Clinton-Baker, iii. 64 (1913); Bean, i. 330 (1914); Wilson, Conifers of Japan, 7 (1916); Dallimore and Jackson, 21 (1923).

ARBORETUM. Young plants in the Down Cover.

Introduced into Europe by Siebold about 1829.

Var. *pedunculata* Miquel. Japan.

Elwes and Henry, vi. 1471 (1912) (as *C. pedunculata* Siebold and Zuccarini); Forbes,

Pin. Woburn, 217, t. 66 (1839) (as *Taxus Harringtonia*); Wilson, Conifers of Japan, 8 (1916) (as *C. drupacea* var. *pedunculata*, Miq.).

Represented at Westonbirt by

Forma *fastigiata* Carrière.

Pleasure Grounds. No. 1161.

Introduced in 1829.

CEPHALOTAXUS FORTUNEI Hooker. China.

Bot. Mag., t. 4499 (1850); Clinton-Baker, iii. 66 (as *C. pedunculata*) (1913); Elwes and Henry, vi. 1470 (1913); Bean, ii. 331 (1914); Dallimore and Jackson, 23 (1923).

Arboretum. No. 911 in the Main Drive. An old specimen.

Introduced in 1848.

CERCIDIPHYLLUM JAPONICUM Siebold. (Family Trochodendraceae.) China, Japan.

Bean, i. 332 (1914).

Arboretum. A group of seven young trees planted about 1917 at Wigmore Bottom, and another group of six in Pool Avenue. No. 91, in the Main Drive, is a tree 28 ft. high by 1 ft. 9 in. (1920) (Plate 24).[1] Several young trees raised from seed by Sir Herbert Maxwell at Monreith, Wigtonshire, planted here and in Pool Avenue in 1920, are very distinct in their bushy habit. The autumnal tints of this strain are quite distinct from the older plants in the collection, as they colour brilliantly, showing tints varying from bright carmine to almost purple and yellow, whereas the old plants die off almost lemon-yellow.

This species, which is the largest deciduous tree in Japan, often reaches a height of 100 ft. When first introduced was usually catalogued as a shrub.

Introduced to Kew in 1881.

Pleasure Grounds. A tree (No. 1332) in the lower garden is 27 ft. high.

Silkwood. A tree (No. 668) in the Willesley Drive is 20 ft. high.

[1] 33 ft. by 1 ft. 10 in. in 1925.

CERCIDIPHYLLUM

In Arboretum

CERCIS CANADENSIS Linnaeus. Redbud. (Family LEGUMINOSAE.) Eastern and Central United States.

Loudon, ii. 659 (1838); Bean, i. 334 (1914).

PLEASURE GROUNDS. No. 1346, a small tree, near the church.

Introduced in 1730.

CERCIS SILIQUASTRUM Linnaeus. Judas-tree. South Europe, Orient.

Bot. Mag., t. 1138 (1808); Bean, i. 335 (1914).

PLEASURE GROUNDS. Araucaria Clump.

Young plants added 1925.

One of the most attractive of flowering trees, which has been in cultivation for more than three hundred years. It was cultivated by Gerard in 1596.

CHIMONANTHUS FRAGRANS Lindley. Winter Sweet. (Family CALYCANTHACEAE.) China.

Bot. Mag., t. 66 (1799) (as *Calycanthus praecox*); Bean, i. 337 (1914).

Var. *grandiflorus* Lindley.

Wall of greenhouse, planted 1925. A very attractive winter flowering shrub.

Introduced in 1766.

CHIONANTHUS VIRGINICA Linnaeus. Fringe Tree. (Family OLEACEAE.) Eastern United States.

Bean, i. 340 (1914).

ARBORETUM. No. 303 in Pool Avenue, No. 317 in Loop Walk.

A very beautiful shrub when in flower.

Introduced in 1736.

CLADRASTIS TINCTORIA Rafinesque. Yellow Wood. (Family LEGUMINOSAE.) South-eastern United States.

Bot. Mag., t. 7767 (1901); Sargent, Silva, iii. 57, tt. 119, 120 (1892) (as *C. lutea*); Loudon, ii. 565 (1838) (as *Virgilia lutea*); Elwes and Henry, ii. 446 (1907); Bean, i. 350 (1914).

Arboretum. No. 66 in the Straight Drive. No. 321 in Loop Walk, measuring 41 ft. 6 in. by 3 ft. 2 in. It is very effective in autumn when the foliage turns bright butter-yellow. Other specimens in the Arboretum.

Archway Walk. A small specimen.

Pleasure Grounds. A young tree, obtained from Winchester, was planted in 1921, when 16 ft. high and 1 ft. in girth, and apparently suffered but little check from the severe drought which followed.

Introduced in 1812.

CLEMATIS ARMANDI Franchet. (Family Ranunculaceae.)
Central and West China.
Bean, i. 355 (1914).

Pleasure Grounds. Wall of Italian Garden.

Introduced by Wilson in 1909, this has proved one of the best of our few evergreen climbers.

CLEMATIS MONTANA Buchanan. Himalaya.
Bean, i. 363 (1914).

Var. *rubens* Kuntze. China.

Wall of gardener's house.

This variety was introduced by Wilson in 1900.

CLEMATIS TANGUTICA André. Central Asia.
Bot. Mag., t. 7710 (1900) (as *C. orientalis* var. *tangutica*).

Pleasure Grounds.

Introduced to Kew in 1898.

CLERODENDRON FARGESI Dode. (Family Verbenaceae.)
China.
Bean, i. 370 (1914).

Arboretum. No. 117 in the Main Drive. Victory Glade; planted in 1922.

Introduced in 1898.

CORNUS CONTROVERSA

Down Gate

CLERODENDRON TRICHOTOMUM Thunberg. China, Japan.

Bot. Mag., t. 6561 (1881); Bean, i. 370 (1914).

ARBORETUM. No. 136 in the Main Drive.

Groups of fine plants in Down Cover and Pool Avenue.

CORNUS ALBA Linnaeus. (Family CORNACEAE.) Siberia, China.

Bean, i. 384 (1914).

Var. *Spaethi* Wittmack.

PLEASURE GROUNDS. No. 1340.

The species was introduced in 1741.

CORNUS CANDIDISSIMA Marshall. Eastern and Central United States.

Bean, i. 386 (1914).

Orchid Nursery.

Introduced in 1758.

CORNUS CONTROVERSA Hemsley. Japan, China, Himalaya.

Bean, i. 387 (1914).

ARBORETUM. No. 88 in the Main Drive.

DOWNS. No. 361, near the Ice House Gate, is an exceptionally fine specimen, which was successfully moved from the Arboretum about ten years ago, and is now 37 ft. high by 1 ft. 9 in. in girth (Plate 25).

This *Cornus*, introduced about forty years ago, is often called *C. brachypoda* in gardens and has been much confused with *C. macrophylla*. It may, however, at once be distinguished from that species by its alternate leaves.

CORNUS FLORIDA Linnaeus. Eastern United States.

Bot. Mag., t. 526 (1801).

Var. *rubra* Hort.

Bot. Mag., t. 8315 (1910); Bean, i. 389 (1914).

ARBORETUM. Young plants in Victory Glade.

The species was introduced early in the eighteenth century.

CORNUS KOUSA Buerger. Japan, Corea, Central China.

Bean, i. 389 (1914).

Walk under archway near Home Farm.

ARBORETUM. Hornbeam Corner, planted out in 1923. Another planted in Loop Walk in 1924.

CORNUS MACROPHYLLA Wallich. Himalaya, China, Japan.

Bot. Mag., t. 8261 (1909); Bean, i. 390 (1914).

ARBORETUM. Down Cover.
SILKWOOD. No. 371, near the Waste Gate.
Old Nursery.
Introduced in 1827.

CORNUS MAS Linnaeus. Cornelian Cherry. Europe.

Bot. Mag., t. 2675 (1826); Bean, i. 390 (1914).

PLEASURE GROUNDS. No. 1337. Two specimens (No. 1359) in new ground.

Var. *aurea elegantissima* Schelle.

ARBORETUM. No. 107 in the Main Drive, near Hornbeam Corner.
PLEASURE GROUNDS. Nos. 1223 and 1313.
SILKWOOD. Willesley Drive.

CORNUS MOMBEIGI Hemsley. Western China.

Kew Bulletin, 333 (1909).

Two plants received from Woburn (Forrest Collection, 1917 seed) in 1923.

CORNUS NUTTALLI Audubon. Western North America.

Bot. Mag., t. 8311 (1910); Bean, i. 391 (1914).

ARBORETUM. No. 318 in Loop Walk the finest specimen and is now 14 ft. high (Plate 26). Another specimen was moved from the Orchid Nursery to Victory Glade in 1922. Down Cover—young plants.

CORNUS NUTTALLI

In Arboretum

Very showy when in flower on account of the conspicuous bracts.

SILKWOOD. Broad Drive.

CORNUS PUBESCENS Nuttall. British Columbia to California.

Bean, i. 392 (1914).

Old Nursery.

Introduced in 1874.

CORNUS STOLONIFERA Michaux. Red Osier. Dogwood. North America.

Bean, i. 393 (1914).

ARBORETUM. Abundant in the Broad Ride and elsewhere. The combination of bright red stems and pink foliage is a very striking feature in the Arboretum during October. The plant increases rapidly by stolons.

CORNUS WALTERI Wangerin. Cent. China.

Pl. Wils., ii. 576 (1916).

ARBORETUM. Specimen received from Aldenham, planted in Middle Ride about 1924.

A recent introduction.

CORYLOPSIS SPICATA Siebold. (Family HAMAMELIDACEAE.) Japan.

Bot. Mag., t. 5458 (1864); Bean, i. 397 (1914).

PLEASURE GROUNDS. No. 1295, near the village end.

Introduced in 1863.

CORYLUS AVELLANA Linnaeus. Hazel or Cobnut. (Family BETULACEAE.) Europe; Western Asia.

Bean, i. 400 (1914).

Frequent in Silkwood and elsewhere.

Var. *contorta* Hort.

Gard. Chron., Jan. 24, 1874, p. 215.

ARBORETUM. Planted by the gate near the Down Pool.

A variety with curiously twisted branches discovered by Earl Ducie in a hedgerow at Frocester in Gloucestershire in 1863.

Var. *pendula* Goeschke.

SILKWOOD. No. 727 in the Willesley Drive.

CORYLUS COLURNA Linnaeus. Turkish Hazel. South-east Europe; Asia Minor.

Loudon, iii. 2029 (1838); Elwes and Henry, iii. 520 (1908); Bean, i. 401 (1922).

SILKWOOD. No. 389 in the Broad Ride is a tree 20 ft. high by 2 ft. 4 in. in girth at 4 ft. No. 536 in the Willesley Drive is a taller specimen, 40 ft. high by 2 ft. 6 in.

Introduced about the middle of the seventeenth century.

CORYLUS MAXIMA Miller. Filbert. Southern Europe.

Bean, i. 403 (1914).

Var. *atropurpurea* Dochnal.

ARBORETUM. Good specimens in the Straight Drive and Broad Avenue.

The species was introduced in 1759.

COTONEASTER ACUTIFOLIA Turczaninow. (Family ROSACEAE.) North and West China.

Bean, i. 405 (1914).

ARBORETUM.

COTONEASTER APPLANATA Duthie. (*C. Dielsiana* Pritzel.) Central China.

Bean, i. 408 (1914).

Walk under high-road Archway.

A graceful shrub with long whip-like shoots, and very effective when fruiting freely.

ARBORETUM. In slant ride Down Pool.

Introduced in 1900.

COTONEASTER BACILLARIS Wallich. Himalaya.

Bean, i. 406 (1914).

ARBORETUM. Planted in the large opening on the side of Pool Avenue opposite Victory Glade in 1922.

SILKWOOD. No. 689 in the Willesley Drive.

COTONEASTER BULLATA Bois. West China, Tibet.

Bot. Mag., t. 8284 (1909) (as *C. moupinensis* forma *floribunda*); Bean, i. 407 (1914).

ARBORETUM. Several plants in Pool Avenue.

A very handsome shrub when in fruit.

First cultivated in Europe about 1898.

COTONEASTER BUXIFOLIA Hort. (*C. prostrata*, Baker (non Wallich).

Bean, i. 407 (1914).

PLEASURE GROUNDS. Large clumps in several places.

Introduced in 1824.

COTONEASTER DIVARICATA Rehder and Wilson. Western Hupeh and Western Szech'uan, China.

Bean, i. 408 (1914).

Orchid Nursery. Specimen received from Aldenham.

Introduced by Wilson in 1904.

COTONEASTER FRANCHETI Bois. Tibet, West China.

Bean, i. 419 (1914).

Old Nursery and elsewhere.

Introduced in 1895.

COTONEASTER FRIGIDA Wallich. Himalaya.

Bot. Reg., t. 1229 (1829); Bean, i. 409 (1914).

There are many fine specimens of this tree at Westonbirt, which make a brilliant display throughout the whole of the winter months, the heavy crops of scarlet berries remaining invariably untouched by birds until they decay in the following summer.[1]

ARBORETUM. No. 27 in the Straight Drive. No. 148 in the

[1] This is not the case at Kew, where only *C. rotundifolia* is safe from birds.

Main Drive is a striking picture when covered with clusters of berries in autumn and early winter; it is 40 ft. high by 3 ft. in girth at 2 in. from the ground, and the largest specimen at Westonbirt.

SILKWOOD. Nos. 675, 713, and 723 in the Willesley Drive.
Introduced about 1824.

COTONEASTER HEBEPHYLLA Diels. Western China.

Notes Roy. Bot. Gard. Edinb. v. 273 (1912).

Var. *fulvida* W. W. Sm.

ARBORETUM. Wigmore Clump.

COTONEASTER HENRYANA Rehder and Wilson. Central China.

Bean, i. 410 (1914).

ARBORETUM. Small clump, Wigmore Field.
PLEASURE GROUND, in clumps.
A very distinct species with evergreen foliage.
SILKWOOD. A group in the Willesley Drive.
Introduced by Wilson in 1901.

COTONEASTER HORIZONTALIS Decaisne. China.

Bean, i. 411 (1914).

Largely planted in Arboretum, Silkwood, and Pleasure Ground.

COTONEASTER HUMIFUSA Duthie. Central China.

Bean, i. 411 (1914).

PLEASURE GROUNDS. Rockery.
Very distinct on account of its prostrate habit.
Introduced by Wilson in 1900.

COTONEASTER MICROPHYLLA Wallich. Himalaya.

Bean, i. 413 (1914).

PLEASURE GROUNDS. Several clumps.

Var. *thymifolia* Koehne.

Bean, i. 415 (1914) as '*C. thymifolia*'.

PLEASURE GROUNDS. Clumps in several places.
Introduced in 1824.

COTONEASTER MULTIFLORA Bunge. North-west China.

Bean, i. 413 (1914).

ARBORETUM. No. 37 at Wigmore Field. No. 244 near gate by Down Pool. Middle Ride, plants raised from Forrest seed (Nos. 14960 and 14791) put out in 1924.

A very elegant shrub when in full flower.

Introduced in 1837.

COTONEASTER PANNOSA Franchet. Yunnan, China.

Bean, i. 414 (1914).

ARBORETUM. Wigmore Clump.

PLEASURE GROUND. Wall of gardener's office.

Introduced in 1892.

COTONEASTER ROTUNDIFOLIA Wallich. Himalaya.

Bot. Mag., t. 8010 (1905); Bean, i. 414 (1914).

ARBORETUM. No. 952 in the Main Drive.

PLEASURE GROUND. Several clumps.

One of the best of the dwarf Cotoneasters on account of the persistence of its fruits, which are very showy and last all the winter.

Introduced in 1825.

COTONEASTER SALICIFOLIA Franchet. China.

Bean, i. 414 (1914).

Var. *floccosa* Rehder and Wilson.

Kitchen Garden.

Var. *rugosa* Rehder and Wilson.

ARBORETUM. Middle Ride.

Orchid Nursery.

Introduced by Wilson in 1907.

COTONEASTER SIMONSI Baker. Khasia Mountains.

Bean, i. 416 (1914).

Used as a hedge in the Old Nursery.

COTONEASTER TURBINATA Craib. China.

Bot. Mag., t. 8546 (1914); Bean, i. 416 (1914).

Two plants received from Woburn (Forrest, 1917 seed) in 1923.
One of the best of the late-flowering Cotoneasters.
Introduced to Kew in 1910.

COTONEASTER ZABELI Schneider. Western Hupeh, China.

Bean, i. 416 (1914).

Orchid Nursery.
Introduced by Wilson in 1907.
A number of Chinese Cotoneasters received at Westonbirt under number have apparently not yet been described.

CRATAEGO-MESPILUS GRANDIFLORA Bean. (Family Rosaceae.) ? Hybrid origin. (*Crataegus monogyna* × *Mespilus germanica*.)

Bot. Mag., t. 3442 (1835) (as *Mespilus lobata*); Loudon, ii. 878 (1838) (as *M. Smithi*); Elwes and Henry, viii. 1732 (1913); Bean, i. 418 (1914).

The Downs. No. 735, a shapely tree 20 ft. high by 2 ft. 10 in., with a spread of 24 ft.
Another tree in group of thorns on the Downs, where the drive curls round the Down Cover.

CRATAEGUS

There is a fine collection of the older and better known thorns at Westonbirt, distributed throughout the Arboretum, Silkwood, and Pleasure Grounds.

A large number of recently named North American Crataegi, many of which are doubtfully distinct, have also been planted during recent years. The number of American thorns now described considerably exceeds a thousand species. In the following list only the leading types are dealt with in detail. Plants of many of the newer species described by Sargent and others have been received from Aldenham and elsewhere, and these have been included in the list for the sake of completeness.

CRATAEGUS ACUTILOBA Sargent. (Family ROSACEAE.) Quebec. (*C. coccinea* var. *indentata.*)

Bean, i. 423 (1914).

Orchid Nursery. Young tree received from Aldenham. Another behind Pickard's Lodge.

CRATAEGUS APRICA Beadle. South-eastern United States.

Bean, i. 421 (1914).

ARBORETUM. Planted in Pool Avenue, opposite Rattray's Nursery, 1924.

Introduced in 1900.

CRATAEGUS ARNOLDIANA Sargent. Massachusetts, Connecticut, New York.

Sargent, Silva, xiii. 103, t. 568 (1892); Bean, i. 429 (1914).

ARBORETUM. Planted 1922.

Introduced in 1901.

CRATAEGUS AZAROLUS Linnaeus. Orient.

Bot. Reg., t. 1897 (1836); Loudon, ii. 827 (1838) (as *C. Aronia*); Bean, ii. 421 (1914)

ARBORETUM. Two small trees near the Down Gate.

Cultivated in the seventeenth century.

CRATAEGUS BARRYANA Sargent. New York

New York State Mus. Bull., cxxii. 52 (1908).

ARBORETUM. Planted in Pool Avenue, opposite Rattray's Nursery, in 1924.

CRATAEGUS CARRIEREI Vauvel.

? Hybrid origin. Bean, i. 422 (1914).

ARBORETUM. No. 53 near the Down Gate.

PLEASURE GROUNDS. No. 1364, edge of shrubbery opposite Bucklemore.

A very fine thorn, both in flower and fruit, but of uncertain origin.

CRATAEGUS COCCINEA Linnaeus. Scarlet Haw. North America.

Loudon, ii. 816 (1838); Bean, i. 423 (1914).

Pleasure Grounds. No. 1357 on New Ground.

Silkwood. Several trees near the Broad Ride.

Several small trees named *C. coccinea* var. *maxima*, in the shrubbery opposite stables.

This species was introduced into cultivation, according to Aiton, in 1683.

CRATAEGUS CORDATA Aiton. Washington Thorn. Eastern United States.

Bean, i. 424 (1914).

Arboretum. Planted in Pool Avenue opposite Rattray's Nursery in 1924.

Introduced in 1738.

CRATAEGUS CRUS-GALLI Linnaeus. Cockspur Thorn. North America.

Loudon, ii. 820, fig. 574 (1838); Bean, i. 424 (1914).

Var. *pyracanthifolia* Aiton.

Loudon, ii. 820, fig. 580 (1838).

Arboretum. No. 149 in the Main Drive. No. 1482 near the Down Gate.

This species was introduced into England in 1691.

CRATAEGUS DOUGLASI Lindley. British Columbia, Washington.

Bot. Reg., t. 1810 (1835); Loudon, ii. 823, fig. 584 (1838); Bean, i. 426 (1914).

Arboretum. A good-sized tree (No. 30) in the left-hand clump facing the Bath road.

Many other specimens.

Downs. Large tree about a hundred yards from the gate leading to the Straight Drive.

SILKWOOD. No. 1487 near the far end of wood. Nos. 1519 and 1526 in the Broad Drive.

Stable Clump. Several small trees.

Introduced in 1828.

CRATAEGUS DUNBARI Sargent. New York.

Proc. Rochester Acad. Sci. lxii. 186 (1908).

ARBORETUM. Planted in Pool Avenue, opposite Rattray's Nursery, in 1924.

CRATAEGUS DUROBRIVENSIS Sargent. New York.

Bean, i. 426 (1914).

ARBORETUM. Young trees put out in Pool Avenue, opposite Rattray's Nursery, in 1924.

Introduced in 1901.

CRATAEGUS ELLWANGERIANA Sargent. North America.

Bot. Gaz. xxxiii. 118 (1902).

ARBORETUM. Planted in Pool Avenue, opposite Rattray's Nursery, in 1924.

CRATAEGUS FERENTARIA Sargent. North America.

Proc. Rochester Acad. Sci. iv. 135 (1903).

ARBORETUM. Pool Avenue, opposite Rattray's Nursery, planted in 1924.

CRATAEGUS GEMMOSA Sargent. North America.

Bot. Gaz. xxxiii. 119 (1902).

ARBORETUM. Young plants put out in Pool Avenue, opposite Rattray's Nursery.

CRATAEGUS HETEROPHYLLA Flugge. Armenia.

Loudon, ii. 829 (1838); Bean, i. 427 (1914).

Silkwood. No. 1501, a small tree in the Broad Drive, evidently of considerable age. Another specimen in the same drive.

This thorn, which has been in cultivation since the beginning of the nineteenth century, is seldom seen in collections. Very distinct in foliage and long narrow fruits.

CRATAEGUS JACKI Sargent. Quebec.

Rhodora, v. 162 (1902).

Rattray's Nursery. Young tree.

CRATAEGUS KOROLKOWI Regel. North China.

Bean, i. 427 (1914).

Arboretum. Young trees planted in Pool Avenue, opposite Rattray's Nursery, 1924.

In cultivation more than forty years.

CRATAEGUS LEEANA Loudon. Origin unknown.

Loudon, ii. 828 (1838) (as *C. tanacetifolia* var. *Leeana*); Bean, i. 428 (1914).

Silkwood. No. 1525, in the Broad Drive, is an old tree, which is very handsome when flowering in mid-June. The foliage much resembles that of the tansy-leaved thorn, but is larger. This thorn is by some regarded as a hybrid *C. punctata* × *tanacetifolia*.

CRATAEGUS MACRACANTHA Loddiges. Eastern North America.

Bean, i. 428 (1914).

Arboretum. Clump in Pool Avenue, opposite Rattray's Nursery. Introduced in 1819.

CRATAEGUS NIGRA Waldstein. Hungary.

Loudon, ii. 822 (1838); Bean, i. 431 (1914)

Shrubbery opposite stables; two or three small specimens. Introduced in 1819.

CRATAEGUS ORIENTALIS Pallas. Orient.

Loudon, ii. 827 (1838); Lindley, Bot. Reg., t. 1885 (1836) (as *C. odoratissima*); Bean, i. 432 (1914).

Has been largely planted at Westonbirt, where the coral red or orange-coloured berries make a fine display in October until they are taken by the birds. This is one of the best of the older thorns.

ARBORETUM. Nos. 125 and 129, in the Main Drive, are both good specimens.

PARK. Old tree edge of shrubbery by the road to the gardener's house.

PLEASURE GROUNDS. No. 1226, near the Pergola; No. 1253, in a shrubbery, is an old tree, 25 ft. high by 3 ft. in girth, has a fine show some autumns until the fruit is removed by birds. No. 1279, near the village end.

SILKWOOD. Nos. 1521 and 1536 in the Broad Drive.

Var. *sanguinea*, Loudon.

Loudon, ii. 828 (1838); Lindley, Bot. Reg., t. 1852 (1836) (as *C. orientalis*).

ARBORETUM. No. 1481 near the Pool Gate into Down.

SILKWOOD. No. 1534 by the Broad Drive.

CRATAEGUS OXYACANTHA Linnaeus. Hawthorn or May. Europe.

Loudon, ii. 829 (1838); Elwes and Henry, vii. 1739 (1913); Bean, i. 432 (1914).

Common everywhere.

Var. *aurea* Loudon.

SILKWOOD. No. 1491 in the Broad Drive.

A yellow-fruited variety which has been in cultivation for more than a hundred years.

Var. *coccinea flore pleno* Paul. Paul's Double Scarlet. Thorn clumps everywhere.

CRATAEGUS PINNATIFIDA Bunge. North China.

Bean, i. 433 (1914).

SILKWOOD. No. 1492 near the Broad Drive, an old and decayed specimen which had long been labelled *C. Layi*.

CRATAEGUS PRUNIFOLIA Bosc. North America. (*C. Crus-Galli* var. *prunifolia*, Torrey and Gray.)

Bot. Reg., t. 1868 (1836); Loudon, ii. 871 (1838); Bean, i. 424 (1914).

A frequent thorn at Westonbirt, especially in Silkwood, where there are many old specimens with umbrella-shaped crowns. It is one of the handsomest thorns in autumn, when the foliage turns a brilliant crimson.

Var. *splendens* Loddiges.

Loudon, ii. 820 (1838) (as *C. Crus-Galli* var. *splendens*).

SILKWOOD. No. 1502 in the Broad Drive.

CRATAEGUS PUNCTATA Jacquin. Eastern North America.

Loudon, ii. 818, tt. 569 and 570 (1838); Bean, i. 434 (1914).

SILKWOOD. Several trees in the Broad Drive and Willesley Drive.

This is one of the best of the older thorns, the large deep red fruits speckled with pale dots being very effective in autumn.

Introduced in 1746.

Var. *brevispina* Hort.

SILKWOOD. Waste.

CRATAEGUS RIVULARIS Nuttall. North America. (*C. Douglasi* var. *rivularis* Sargent; *C. Macnabiana* Hort.)

Bean, i. 426 (1914).

This thorn has been largely planted at Westonbirt under the name of *C. Macnabiana*, and colours most effectively in early autumn, when the foliage turns a brilliant scarlet. The best tree (No. 57 in the Straight Drive) is about 25 ft. high and 3 ft. in girth (Plate 27). *Crataegus rivularis* is closely allied to *C. Douglasi*, but in habit is more irregular in outline. The fruits are black and ineffective.

CRATAEGUS SALIGNA Greene. North America.

Pittonia, iii. 99 (1896).

Young plant in Rattray's Nursery.

CRATAEGUS RIVULARIS

In Arboretum

CRATAEGUS SUBMOLLIS Sargent. Texas.

Bot. Gaz. xxxi. 7 (1901).

Rattray's Nursery.

CRATAEGUS SUCCULENTA Link. Eastern North America.

Bean, i. 436 (1914).

Orchid Nursery. Young tree received from Aldenham.

CRATAEGUS TOMENTOSA Linnaeus. Eastern and Central United States.

Bean, i. 437 (1914).

Silkwood. Old specimen (No. 1531) in the Broad Drive. Introduced in 1765.

A collection of some of the more recently described North American thorns has been received from Aldenham under the following names, and have now been planted out on the Downs:

C. arcana Beadle.
C. Arduennae Sargent.
C. Bedfordensis Sargent.
C. bella Sargent.
C. brachypoda Sargent.
C. callosa Sargent.
C. calvescens Sargent.
C. cognata Sargent.
C. conferta Sargent.
C. conspicua Sargent.
C. Crawfordiana Sargent.
C. cristata Ashe.
C. delucida Sargent.
C. Dodgei Ashe.
C. efferta Sargent.
C. flagrans Sargent.
C. flavida Sargent.
C. florifera Sargent.
C. foliata Sargent.
C. genialis Sargent.
C. glabrifolia Sargent.
C. globosa Sargent.
C. Halliana Sargent.
C. incaedua Sargent.
C. insueta Sargent.
C. lasiantha Sargent.
C. latifrons Sargent.
C. Livingstoniana Sargent.
C. luminosa Sargent.
C. matura Sargent.
C. micrantha Sargent.
C. Missouriensis Ashe.
C. mollicula Sargent.
C. Neobaxteri Sargent.

C. patrum Sargent.
C. promissa Sargent.
C. pudens Sargent.
C. recordabilis Sargent.
C. reses Ashe.
C. retrusa Ashe.
C. rotundifolia Moench.
C. rustica Beadle.
C. saxatilis Sargent.
C. tenella Ashe.
C. tetrica Beadle.
C. venustula Sargent.
C. villiflora Sargent.
C. vulsa Beadle.
C. Wheeleri Nelson.

and others under number.

CRINODENDRON HOOKERIANUM Gay. Chile. (Family TILIACEAE.)

Bot. Mag., t. 7160 (1891) (as *Tricuspidaria dependens*); Bean, 2. ii. 601 (1914) (as *T. lanceolata*).

ARBORETUM. No. 331, a clump in the Down Cover, 10 ft. high. It was planted in 1914, but badly cut by frost in 1921.

Young plants raised from cuttings.

Introduced in 1848.

CRYPTOMERIA JAPONICA Don. (Family PINACEAE.) Japan.

Elwes and Henry, i. 128 (1906); Clinton-Baker, i. 68 (1909); Wilson, Conifers of Japan, 66 (1916); Bean, i. 438 (1914); Dallimore and Jackson, 180 (1923).

ARBORETUM. Wigmore Bottom, No. 773, a group of four trees. No. 1012, in Loop Walk, includes two trees, the tallest being 65 ft. by 5 ft. 9 in.

SILKWOOD. No. 1125 in the Willesley Drive.

PLEASURE GROUNDS. No. 1325, east of lake.

Var. *elegans* Masters. (*Cryptomeria elegans* Veitch.)

Clinton-Baker, iii. 78 (1913).

ARBORETUM. A group of six young trees (No. 908) in the Main Drive were planted about 1917.

Another group in Pool Avenue contains six trees planted about 1914, the tallest being now about 20 ft. high.

SILKWOOD. No. 1124 in the Willesley Drive.

This species was introduced in 1842, but the variety *elegans* in 1861 by J. G. Veitch.

CUPRESSUS ARIZONICA Greene. (Family PINACEAE.) Arizona.

Elwes and Henry, v. 1189 (1910); Clinton-Baker, iii. 44 (1910); Bean, i. 443 (1914); Dallimore and Jackson, 193 (1923).

ARBORETUM. Several specimens.

PLEASURE GROUNDS. No. 1196. New Ground.

The Westonbirt plants, like most others in cultivation, have glandular foliage, and would on this account belong to *C. glabra*, which Sudworth has separated from *C. arizonica* as a distinct species.

Introduced in 1882.

CUPRESSUS LAWSONIANA Murray. Lawson Cypress. Oregon and California.

Bot. Mag., t. 5581 (1866); Sargent, Silva, x. 119, t. 531 (1896); Elwes and Henry, v. 1200 (1910); Bean, i. 444 (1914); Dallimore and Jackson, 200 (1923).

This ubiquitous conifer and its numerous ornamental varieties are represented at Westonbirt by many beautiful specimens in the Arboretum and Pleasure Grounds.

ARBORETUM. A fine group of about a dozen trees in Loop Walk, the tallest being not less than 60 ft. high. They were probably planted about 1870. No. 837 in the Broad Ride is about 65 ft. high, and in excellent health. There is a still finer tree in Acer Grove measuring 60 ft. high with seven stems from the base, and another at the end of Clay Island.

Var. *Allumi* Beissner.

ARBORETUM. A group of seven young trees (No. 779), planted in the Straight Drive about 1912, were 14 ft. high in 1921. Another group in Victory Glade.

SILKWOOD. Several groups.

Var. *aurea* Waterer.

ARBORETUM. No. 901 in the Main Drive.

PLEASURE GROUNDS. No. 1335, near the old Scots Pine clump, is a well-coloured example 24 ft. high. No. 1354 on New Ground.

PARK. Several good specimens in Cricket Field, and also in the Garden Plantation.

Var. *elegans* Beissner.

No. 1179 near the bastion. A pair. This variety was first sent out by Jeffreys of Cirencester.

Var. *erecta viridis* Beissner.

A very striking columnar variety with bright green foliage, which has been largely planted at Westonbirt.

Arboretum. No. 976, between the Pool and Down Cover in Main Drive, 47 ft. high. Ten young trees (No. 776) in the Straight Drive, planted about 1919 when 7 to 8 ft. high.

Pleasure Grounds. No. 546 near the conservatory, 50 ft. high, is the finest specimen of this variety at Westonbirt (Plate 28). There are several other specimens almost equally good.

This variety rivals *Pinus insignis* in the brilliancy of its colouring.

Var. *glauca* Beissner.

Arboretum. A group of three trees in the Main Drive associated with other varieties.

Var. *gracilis pendula* Beissner.

Silkwood. No. 1097 in the Broad Drive.

Other fine plants in Willesley Drive.

Var. *intertexta* Beissner.

Silkwood. No. 1119 in the Willesley Drive, 45 ft. by 3 ft. 5 in.; an elegant specimen.

Var. *lutea* Beissner.

Arboretum. Three trees (No. 816) in the Straight Drive associated with a fine plant of *C. macrocarpa* var. *lutea* are about 23 ft. high, and provide a vivid patch of colour during the winter months. Planted about 1896.

Var. *nana* Beissner.

Pleasure Grounds. No. 1141 near the Rockery.

Var. *Stewarti* Hort.

Pleasure Grounds. No. 1157 near the village end of the garden.

LAWSON CYPRESS

By Conservatory

Var. *Wisseli* Beissner.

ARBORETUM. A group of five young trees (No. 775) planted about 1920 on the Straight Drive are now about 12 ft. high.

PLEASURE GROUNDS. No. 1194, a tree about 22 ft. by 1 ft. 4 in.

Seeds of this species were first sent to Britain in 1854.

CUPRESSUS LUSITANICA Miller. Cedar of Goa. Mexico.

Loudon, iv. 2477 (1838); Elwes and Henry, v. 1176 (1910); Clinton-Baker, iii. 53 (1913); Bean, i. 446 (1914); Dallimore and Jackson, 206 (1923).

ARBORETUM. Two trees in Pool Avenue, one (No. 994) 63 ft. by 7 ft. 6 in. and pyramidal; the other (No. 995) is of spreading habit. Both are said to have been raised by the late Mr. Holford from the same batch of seed, and afford a striking example of variation in the seed-bed. A young tree (No. 993), also in Pool Avenue, raised by Mr. Elwes from seed collected by him at Bussaco, Portugal, and planted about 1912, is now 20 ft. high.

Introduced before 1682.

CUPRESSUS MACROCARPA Hartweg. Monterey Cypress. California.

Sargent, Silva, x. 103, t. 525 (1896); Clinton-Baker, ii. 72 (1909); Elwes and Henry, v. 1165 (1910); Bean, i. 447 (1914); Dallimore and Jackson, 208 (1923).

There are many picturesque old trees of this well-known cypress at Westonbirt, the contrast of white stem and dark green foliage being very striking.

ARBORETUM. The largest we have measured is No. 927 in the Main Drive, which is 80 ft. by 8 ft. Other old trees are 60 ft. or more in height, but several of them have been badly damaged by storms. There is a very fine and well-furnished one in the Main Drive, with branches widely spreading from the base.

PLEASURE GROUNDS. A tree (No. 547) at the west end of the house measuring 60 ft. by 6 ft. 5 in.

Var. *fastigiata* Masters.

SILKWOOD. Two trees (No. 1095) in the Willesley Drive, one measuring 54 ft. 6 in. by 5 ft.

Var. *lutea* Kent.

A very graceful variety, which provides a striking contrast of colour.

Arboretum. No. 817 in the Main Drive was planted about 1896, and is now 38 ft. high. No. 836 in the Broad Ride. A group in Pool Avenue, the tallest 30 ft. high.

Pleasure Grounds. No. 1193 on New Ground, an unusually fine specimen measuring 46 ft. by 4 ft.

Silkwood. No. 1117 in the Willesley Drive.

Introduced about 1840.

CUPRESSUS NOOTKATENSIS Don. Yellow Cypress. Western North America from Alaska to California.

Loudon, iv. 2480 (1838); Sargent, Silva, x. 115, t. 530 (1896); Elwes and Henry, v. 1194 (1910); Bean, i. 448 (1914); Dallimore and Jackson, 211 (1923).

Represented at Westonbirt by many specimens of great beauty and elegance.

Arboretum. A very handsome specimen (No. 748) in the Straight Drive is 61 ft. high by 6 ft. 7 in. (Plate 29). A well-shaped tree in the Main Drive, 50 ft. high. In Loop Walk there is a group of three fine specimens (No. 100) associated with other conifers, the tallest about 70 ft. high, and planted about 1870. No. 960, in the Main Drive, a tree 40 ft. high and 9 ft.

Pleasure Grounds. A very fine specimen (No. 1165) near the lake is about 42 ft. high and 93 ft. round at the base.

Var. *lutea* Beissner.

Arboretum. No. 923 in the Main Drive, 60 ft. high.

Pleasure Grounds. No. 1197, a tree 35 ft. by 2 ft. 10 in.

The species was introduced about 1793.

CUPRESSUS OBTUSA Koch. Hinoki Cypress. Japan.

Elwes and Henry, v. 1185 (1910); Bean, i. 448 (1914); Wilson, Conifers of Japan, 76 (1916); Dallimore and Jackson, 214 (1923).

Arboretum. No. 1010, in Loop Walk, is 47 ft. by 3 ft. 3 in.

Silkwood. No. 1126, in the Willesley Drive, is 42 ft. by 2 ft. 3 in.

CUPRESSUS NOOTKATENSIS

In Arboretum

Var. *aurea* Beissner.

No. 1108 in the Willesley Drive.

Var. *Crippsi* Hort.

ARBORETUM. No. 757 at Wigmore Clump. A group of four young trees in Victory Glade planted 1919.

SILKWOOD. Sand Earth Corner, two groups.

PLEASURE GROUNDS. A well-grown specimen (No. 1406) on the terrace.

Var. *filicoides* Masters.

PLEASURE GROUNDS. No. 1140 on the Rockery.

Var. *lycopodioides* Masters.

SILKWOOD. Willesley Drive (No. 1114), an unusually good specimen of this distinct variety; 19 ft. by 1 ft. 3 in.

Var. *nana* Carrière.

PLEASURE GROUNDS. No. 1173.

Var. *tetragona aurea* Masters.

SILKWOOD. No. 1100 in the Willesley Drive.

The species was introduced in 1861.

CUPRESSUS PISIFERA Koch. Sawara Cypress. Japan.

Elwes and Henry, v. 1190 (1910); Bean, i. 449 (1914); Wilson, Conifers of Japan, 78 (1916); Dallimore and Jackson, 217 (1923).

SILKWOOD. Two trees, Nos. 1105 and 1127, in the Willesley Drive, the latter about 30 ft. by 2 ft. 9 in.

Var. *filifera* Masters.

PLEASURE GROUNDS. No. 1150, on the Rockery.

Var. *filifera aurea* Hort.

No. 1149, on the Rockery.

Var. *plumosa* Masters.

Common.

Var. *plumosa aurea* Beissner.

ARBORETUM. No. 963, in the Main Drive, was an unusually fine tree until the top was blown out; it is still 30 ft. by 4 ft. 2 in., and forks at 4 ft. from the ground.

SILKWOOD. No. 1109 in the Willesley Drive.

Var. *squarrosa* Masters.

ARBORETUM. No. 899, in the Main Drive, is 35 ft. by 3 ft. 3 in. Another tree No. 1011, about the same size but much better furnished in Loop Walk, has lost its top.

PLEASURE GROUNDS. Main Rockery.

The species and its varieties introduced in 1861 by J. G. Veitch.

CYDONIA JAPONICA Persoon. Japanese Quince. (Family ROSACEAE.) China, Japan.

Bean, i. 452 (1914).

PLEASURE GROUNDS.

Introduced in 1796.

CYDONIA MAULEI Moore. Dwarf Quince. Japan.

Bean, i. 453 (1914).

PLEASURE GROUNDS, where it fruits abundantly on the west bastion wall.

Introduced about 1869.

CYDONIA WILSONI Hort. China.

Pl. Wils., ii. 296 (1915) (as *Chaenomeles lagenaria* var. *Wilsoni* Rehder).

ARBORETUM. Planted in Victory Glade in 1922.

The large lemon-like fruits were very noticeable in the autumn of 1924.

CYTISUS DALLIMOREI Rolfe. (C. *albus* × *scoparius* var. *Andréanus*.) (Family LEGUMINOSAE.)

Bot. Mag., t. 8482 (1913); Bean, i. 458 (1914).

PLEASURE GROUNDS.

Raised at Kew in 1900.

CYTISUS KEWENSIS Bean. Hybrid origin. (*C. Ardoini* × *albus.*)

Bean, i. 459 (1914).

PLEASURE GROUNDS. Near Rockery.
First raised at Kew in 1891.

CYTISUS PRAECOX Wheeler. (*C. purgans* × *albus.*) Warminster Broom.

Bean, i. 461 (1914).

PLEASURE GROUNDS.

CYTISUS SCOPARIUS Link. Common Broom. Europe.
Var. *Andréanus* Dippel.

Bean, i. 463 (1914).

PLEASURE GROUNDS.

DAPHNE PONTICA Linnaeus. (Family THYMELAEACEAE.) Asia Minor.

Bot. Mag., t. 1282 (1810); Bean, i. 473 (1914).

PLEASURE GROUNDS. New Ground and elsewhere.
Introduced in 1752.

DAPHNIPHYLLUM MACROPODUM Miquel. (Family EUPHORBIACEAE.) Japan.

Bean, i. 475 (1914).

ARBORETUM. A good plant in the Down Cover.
PLEASURE GROUNDS. A fine plant (No. 1206) near the Terrace.
Introduced in 1879.

DAVIDIA INVOLUCRATA Baillon. (Family CORNACEAE.) Central and West China.

Bot. Mag., t. 8432 (1912); Bean, i. 475 (1914).

ARBORETUM. No. 234 at end of Clay Island is a tree 21 ft. high. This is one of the plants raised from seed collected by Wilson for

Messrs. Veitch during his second journey in China (1903-5). It has the leaves densely hairy beneath, like the original plant discovered by David in China.

A young plant at the entrance to Loop Walk has the leaves glabrous beneath, and has been described as a distinct species (*D. laeta*) by Dode. To this must be referred the many plants raised by Messrs. Veitch from Wilson's seeds collected during his first journey to China (1899–1902).

One of the most striking and beautiful of the Chinese introductions. Discovered by the Abbé David in 1869, but not introduced to Europe until 1897.

DIOSPYROS LOTUS Linnaeus. Date-Plum. (Family EBENACEAE.) China, Himalaya.

Loudon, ii. 1194 (1838); Elwes and Henry, iv. 999 (1909); Bean, i. 494 (1914).

ARBORETUM. Main Drive, planted 1926 when about 10 ft. high. Introduced about 1630.

DRIMYS AROMATICA F. Mueller. (Family WINTERACEAE.) Tasmania, Victoria.

Bot. Reg. xxxi, t. 43 (1845); Bean, i. 502 (1914).

ARBORETUM. Young plants in the Down Cover.

DRIMYS WINTERI Forster. Winter's Bark. South America.

Bot. Mag., t. 4800 (1854); Bean, i. 502 (1914).

ARBORETUM. No. 345 in the Down Cover (three plants, the tallest 11 ft. 6 in. high). Although a tender species this shrub has done remarkably well at Westonbirt, but it has not yet reached the flowering stage.

Introduced in 1827.

ELAEAGNUS MACROPHYLLA Thunberg. (Family ELAEAGNACEAE.) Corean Archipelago and Japan.

Bot. Mag., t. 7638 (1899); Bean, i. 506 (1914).

ARBORETUM. Wigmore Clump.

Introduced in 1879.

ELAEAGNUS PUNGENS Thunberg. Japan.

Bean, i. 508 (1914).

PLEASURE GROUNDS.

ELAEAGNUS UMBELLATA Thunberg. Himalaya, China, Japan.

Bean, i. 508 (1914).

ARBORETUM. Main Drive.

EMBOTHRIUM COCCINEUM Forster. Fire Bush. (Family PROTEACEAE.) Chile.

Bot. Mag., t. 4856 (1855); Bean, i. 510 (1914).

ARBORETUM. Two good specimens of this beautiful tree in the Down Cover; they flower freely in early June. The tallest is 17 ft. high. It is surprising that so tender a plant should thrive in the Cotswolds.

Introduced in 1846.

ENKIANTHUS CAMPANULATUS Nicholson. (Family ERICACEAE.) Japan.

Bot. Mag., t. 7059 (1889); Bean, i. 512 (1914).

ARBORETUM. Down Cover, a group of about a dozen good plants. Clay Island, one specimen, planted 1923.

Introduced in 1880.

ENKIANTHUS CERNUUS Bentham and Hooker fil. Japan.

Bean, i. 812 (1914).

Var. *rubens* Makai.

ARBORETUM. Young plant in the Down Cover.

ERICA CARNEA Linnaeus. Alps of Central Europe. (Family ERICACEAE.)

Bean, i. 519 (1914).

PLEASURE GROUNDS. In several places. The var. *alba* has also been planted.

Introduced in 1763.

ERICA MEDITERRANEA Linnaeus. South France, Spain, and Ireland.

Bean, i. 532 (1914).

Pleasure Grounds.
Introduced in 1648.

ERICA STRICTA Andrews. South Spain, Italy, Corsica, and Sardinia.

Bot. Mag., t. 8063 (1906); Bean, i. 523 (1914).

Pleasure Grounds. Sunken Garden.
Introduced, according to Aiton, in 1765.

ERICA VAGANS Linnaeus. Cornish Heath, Cornwall, South Europe.

Bean, i. 524 (1914).

Pleasure Grounds. Several clumps.

ESCALLONIA LANGLEYENSIS Veitch. (*E. Philippiana* × *punctata.*) (Family Saxifragaceae.)

Bean, i. 528 (1914).

Pleasure Grounds. Several good plants.
First raised in 1893.

ESCALLONIA MACRANTHA Hooker. Island of Chiloe.

Bot. Mag., t. 4473 (1849); Bean, i. 528 (1914).

Aboretum and Pleasure Grounds.
Introduced about 1846.

ESCALLONIA MONTEVIDENSIS De Candolle. South America.

Bean, ii. 527 (1914).

Arboretum. Down Cover, planted 1923. One of the most desirable of the Escallonias on account of its late flowering.

EUCOMMIA ULMOIDES Oliver. (Family Trochodendraceae.) China.

Bean, i. 534 (1914).

Arboretum. Clay Island (No. 235).
This tree is of special interest from the fact that it is the only

hardy one which is known to produce rubber. Strings of rubber are visible when a leaf is gently torn in two.

Introduced in 1896.

EUCRYPHIA CORDIFOLIA Cavanilles. (Family EUCRYPHIACEAE.) Valdivia and Island of Chiloe.

Bean, i. 535 (1914).

ARBORETUM. Young plants in the Down Cover put out in 1921. Introduced in 1851.

EUCRYPHIA PINNATIFOLIA Gay. Chile.

Bot. Mag., t. 7067 (1889); Bean, i. 536 (1914).

ARBORETUM. No. 226 at Clay Island. No. 108 in the Main Drive. Many young plants are growing vigorously in the Down Cover.

One of the most beautiful of the South American shrubs in cultivation.

Introduced in 1859.

EUONYMUS ALATUS Regel. (Family CELASTRACEAE.) China, Japan.

Bean, i. 537 (1914).

Large clumps of fifty or more plants have been distributed in the Arboretum, Pleasure Grounds, and Silkwood. A very fine specimen (No. 1338) in the garden, planted in 1880, is 9 ft. high and 45 ft. in circumference. In October the foliage becomes a rose-madder colour. No. 1353 on New Ground is 11 ft. high.

EUONYMUS EUROPAEUS Linnaeus. Spindle Tree. Europe, including the British Isles.

Bean, i. 539 (1914).

Var. *aucubaefolius* Hort.

Kitchen Garden.

Var. *atropurpureus* Hort.

ARBORETUM. No. 126 in the Main Drive.
SILKWOOD. No. 558 in the Willesley Drive.
PLEASURE GROUNDS.

EUONYMUS LATIFOLIUS Miller. Europe.

Bean, i. 540 (1914).

Pleasure Grounds. A fine plant (No. 1417) on the Terrace. Other plants elsewhere.

Introduced in 1730.

EUONYMUS NANUS Bieberstein. Caucasus eastwards to China.

Bean, i. 540 (1914).

Rattray's Nursery.

Introduced in 1830.

EUONYMUS OXYPHYLLUS Miquel. Japan, Corea.

Schneider, Laubholzkunde, ii. 180 (1907).

Silkwood. Willesley Drive, planted 1925.

EUONYMUS SANGUINEUS Loesener. West China.

Bean, i. 542 (1914).

Young plants in Rattray's Nursery.

EUONYMUS YEDOENSIS Koehne. Japan.

Bean, i. 543 (1914).

Arboretum. Young plants in the Broad Ride.

EUPTELEA DAVIDIANA Baillon. (Family Trochodendraceae.) North India, China.

Pl. Wils., ii. 313 (1913) (as *E. pleiosperma* Hooker); Bean, i. 544 (1914).

Arboretum. No. 302 in Pool Avenue.

EXOCHORDA GIRALDI Hesse. (Family Rosaceae.) North and East China.

Bean, i. 548 (1914).

Kitchen Garden Nursery.

Introduced to England in 1909.

EXOCHORDA MACRANTHA Lemoine. (*E. Korolkowi* × *grandiflora.*)

Bean, i. 549 (1914).

Kitchen Garden Nursery.

FAGUS ENGLERIANA Seemann. (Family CUPULIFERAE.) Western China.

Pl. Wils., ii. 191 (1916).

Young plant in the Kitchen Garden Nursery.

An Alpine species common on the higher mountains of North-western Hupeh and Eastern Szech'uan, where, according to Wilson, it forms pure woods.

FAGUS FERRUGINEA Aiton. American Beech. Eastern North America.

Loudon, iii. 1980 (1838); Sargent, Silva, ix. 27 (1896); Elwes and Henry, i. 2 (1906); Bean, i. 550 (1914).

SILKWOOD. A small tree (No. 538 a) in Willesley Drive, probably planted about 1878, has grown very slowly, being now only 25 ft. by 2 ft. 2 in.

The American beech is rarely seen in English gardens. The leaves differ from those of the common beech in being regularly toothed and having more numerous nerves.

Introduced in 1766.

FAGUS SIEBOLDI Endlicher. Japan.

Elwes and Henry, i. 4 (1906); Bean, i. 551 (1914).

Young plant in Rattray's Nursery.

Closely allied to the English beech, of which it may be only a geographical variety.

FAGUS SYLVATICA Linnaeus. Common Beech. Europe (including England).

Loudon, iii. 1950 (1838); Elwes and Henry, i. 6 (1906); Bean, i. 551 (1914).

The finest beech at Westonbirt is the tree in the Pleasure Grounds on the lawn near the old Scots pine clump. When measured in 1921 it was 103 ft. high by 11 ft. 8 in. in girth, with a fine clean bole 27 ft. long. In 1925 the girth was 12 ft.

Var. *aureo-variegata* Hort.

Silkwood. No. 652 in the Willesley Drive.

Var. *Dawyckii* Hesse. Dawyck or Fastigiate Beech.

Pleasure Grounds. Young plant on the Terrace. Received from Dawyck in 1922.

Var. *heterophylla* Loudon. Fern-leaved Beech.

Pleasure Grounds. No. 541 near the house is a large well-shaped tree, 63 ft. by 9 ft.

Park. A tree near the gardener's cottage.

Silkwood. No. 575 in the Willesley Drive.

Var. *pendula* Loddiges.

Weeping Beech.

Silkwood. No. 583 in Willesley Drive, a very fine specimen measuring 53 ft. by 4 ft. 5 in. in 1921 and planted about 1880. (Plate 30.)

Two young trees near the entrance gate to the Arboretum are about 25 ft. high and making good growth.

Var. *purpurea* Aiton. Purple Beech.

Has been largely planted in the Arboretum, where there are several trees of exceptional size. They are particularly attractive in spring, when the expanding young leaves are of a pale claret colour, changing to deep purple in the summer.

Var. *purpurea pendula* Hort.

Arboretum. A tree of considerable age near the Down Pool, its measurements being: height, 10 ft. 6 in.; girth, 1 ft. 4 in.

Pleasure Grounds. Two very fine specimens, with crowns resembling a bee-hive in shape, one being 10 ft. high, the stem 1 ft. 4 in. in girth at 5 ft. from the ground, and 20 ft. in circumference. They are of very slow growth.

The beech is a characteristic tree of the Cotswold country. At Badminton Park, three miles away, the main avenue consists of circular clumps of beech.

WEEPING BEECH

In Silkwood

FITZROYA PATAGONICA Hooker. (Family PINACEAE.) Chile, North Patagonia.

Bot. Mag., t. 4616 (1851); Elwes and Henry, vi. 1454 (1912); Clinton-Baker, iii. 81 (1913); Bean, i. 556 (1914); Dallimore and Jackson, 227 (1923).

ARBORETUM. Young plants in Rattray's Nursery.

Introduced in 1849 by Lobb.

FORSYTHIA INTERMEDIA Zabel. (Family OLEACEAE.) (? *F. suspensa* × *viridissima*.)

Bean, i. 558 (1914).

Var. *spectabilis* Koehne.

This, one of the best of the Forsythias, has been largely planted in the Arboretum and Pleasure Grounds.

FORSYTHIA SUSPENSA Vahl. Golden Bell. China.

Bot. Mag., t. 4995 (1857); Bean, i. 558 (1914).

ARBORETUM and PLEASURE GROUNDS.

Var. *Fortunei* Rehder.

Orchid Nursery.

Introduced about 1850.

FORSYTHIA VIRIDISSIMA Lindley. China.

Bot. Mag., t. 4587 (1851); Bean, i. 559 (1914).

PLEASURE GROUNDS.

Introduced in 1844.

FOTHERGILLA MAJOR. Loddiges. (Family HAMAMELIDACEAE.) Allegheny Mts. from Virginia to S. Carolina.

Bot. Mag., t. 1342 (1810), as '*F. alnifolia* var. major'; Bean, l. 561 (1914).

ARBORETUM. Enclosure in Down Cover. Enclosure near the Down Pool.

PLEASURE GROUNDS. Berberis bed near south front of house.

This particularly attractive shrub has been grown in English gardens since 1780, but was apparently lost to cultivation for many years. It was introduced to Kew in 1902.

FRAXINUS AMERICANA Linnaeus. White Ash. (Family Oleaceae.) Eastern North America.

Loudon, 1232 (1838); Sargent, Silva, vi. 43, tt. 268, 269 (1894); Elwes and Henry, iv. 901 (1909); Bean, i. 562 (1914).

Arboretum. No. 260 between the Pool and Down Cover on the right-hand side.

Park. A tree in Rough Ground, one of the finest in the country, measuring 80 ft. high by 6 ft. in girth, was killed by the great drought of 1921.

Silkwood. Nos. 440, 460, and 514 in the Broad Drive, and No. 597 in the Willesley Drive, are small trees.

Introduced in 1724.

FRAXINUS ANGUSTIFOLIA Vahl. Narrow-leaved Ash. South Europe, North Africa.

Loudon, ii. 1229 (1838); Elwes and Henry, iv. 879 (1909); Bean, i. 563 (1914).

Silkwood. No. 385 in the Broad Drive. No. 609 in the Willesley Drive is a tree 60 ft. 6 in. high by 3 ft. 4 in. in girth. Nos. 611 and 696 are smaller trees in the same drive.

FRAXINUS EXCELSIOR Linnaeus. Common Ash. Europe (including England), Caucasus.

Loudon, ii. 1214 (1838); Elwes and Henry, iv. 864 (1909); Bean, i. 567 (1914).

Arboretum. The large ash near Clay Island, which measures 87 ft. by 12 ft. 3 in., is probably an old hedgerow tree. There are several others about the same size and age crossing the Arboretum on each side of the Broad Ride.

Park. An old tree, 90 ft. high by 15 ft. 6 in. in girth.

Var. *monophylla* O. Kuntze. One-leaved Ash.

Silkwood. No. 511 in the Broad Drive. No. 584 in the Willesley Drive is a tree 50 ft. high with a slender bole only about 2 ft. in girth. No. 617 in the Willesley Drive.

This remarkable variety occasionally appears among seedlings of the common ash, and intermediate forms with three, five, and seven leaflets are sometimes found.

Var. *pendula* Aiton. Weeping Ash.

Several trees.

FRAXINUS DIMORPHA Cosson. Algerian Ash. Morocco, Algeria.

Elwes and Henry, iv. 884 (1909); Bean, i. 566 (1914)

SILKWOOD. A small tree (No. 632 a) was discovered hidden away in a shrubbery in Willesley Drive during some cutting-out operations in 1922.

This species is very rare in cultivation and never attains a large size.

FRAXINUS LANCEOLATA Borkhausen. Green Ash. North America.

Loudon, ii. 1236 (1838) (as *F. juglandifolia*); Sargent, Silva, vi. 51, t. 272 (1894) (as *F. pennsylvanica* var. *lanceolata*); Elwes and Henry, iv. 907 (1909); Bean, 569 (1914).

SILKWOOD. No. 471 in the Broad Drive.

Long cultivated in Europe.

FRAXINUS MARIESI Hooker. Central China.

Bot. Mag., t. 6678 (1883); Elwes and Henry, iv. 892 (1909); Bean, i. 570 (1914).

ARBORETUM. No. 328 in the Down Cover.

Introduced by Maries in 1878.

FRAXINUS OBOVATA Blume. China.

Elwes and Henry, iv. 895 (1909).

Orchid Nursery. A young plant from Aldenham, where it was raised from seed obtained from the Imperial Garden at Tokyo, Japan.

FRAXINUS OREGONA Nuttall. Oregon Ash. North-west America.

Sargent, Silva, vi. 57, t. 276 (1894); Elwes and Henry, iv. 910 (1909); Bean, i. 571 (1914).

A tree in the garden plantation is 25 ft. high and 1 ft. 8 in. in girth. The dense white tomentum which covers the young leaves makes the tree a conspicuous object in spring.

Discovered by Douglas in 1825, but not introduced until about half a century later.

FRAXINUS ORNUS Linnaeus. Manna Ash. South Europe, Asia Minor.

Loudon, ii. 1241 (1838) (as *Ornus europaea*); Elwes and Henry, iv. 887 (1909); Bean, i. 572 (1914).

Pleasure Grounds. No. 1352 by the churchyard wall is the best specimen at Westonbirt, and measures 43 ft. by 4 ft. 6 in. It is grafted 1 ft. from the ground.

Silkwood. Several trees in the Broad Drive and Willesley Drive. One in the circle of the Broad Drive measures 45 ft. high by 3 ft. 9 in. in girth.

A very handsome tree when in flower.

Introduced early in the eighteenth century.

FRAXINUS PAXIANA Lingelsheim. China, Himalaya.

Pl. Wils., ii. 259 (1914), 623 (1916).

Orchid Nursery. A young tree received from Aldenham.

FRAXINUS PENNSYLVANICA Marshall. Red Ash. Eastern North America.

Loudon, ii. 1233 (1838) (as *F. pubescens*); Sargent, Silva, t. 49, T. 271 (1894); Elwes and Henry, iv. 908 (1909); Bean, iv. 572 (1914).

Silkwood. No. 386 in the Broad Drive. Four small trees, Nos. 613, 619, 633, and 690, in the Willesley Drive.

Var. *aucubaefolia* Rehder.

Silkwood. No. 529 in the Willesley Drive.

FRAXINUS VELTHEIMI Dieck. Garden origin.

Elwes and Henry, iv. 880 (as *F. angustifolia* var. *monophylla*); Bean, i. 574 (1914).

Silkwood. No. 461 in the Broad Drive. No. 641 in the Willesley Drive is an unusually good specimen, 40 ft. high by 2 ft. 9 in.

This Ash is very distinct in its foliage, which has the leaflets usually solitary, but sometimes in twos and threes, very similar to those of *F. excelsior* var. *monophylla*.

GAULTHERIA SHALLON Pursh. Shallon. (Family ERICACEAE.) Western North America.

Bot. Mag., t. 2843 (1828); Bean, i. 581 (1914).

ARBORETUM and PLEASURE GROUNDS.
Introduced in 1826.

GENISTA HISPANICA Linnaeus. Spanish Gorse. (Family LEGUMINOSAE.) South-west Europe.

Bot. Mag., t. 8528 (1913); Bean, i. 588 (1914).

PLEASURE GROUNDS.
Introduced in 1759.

GINKGO BILOBA Linnaeus (*Salisburia adiantifolia* Smith). Maidenhair Tree. (Family GINKGOACEAE.) ? China.

Loudon, iv. 2094 (1838); Elwes and Henry, i. 56 (1906); Bean, i. 592 (1914); Dallimore and Jackson, 543 (1923).

ARBORETUM. Young plants.

PLEASURE GROUNDS. A young tree (No. 1245) planted in 1914 is now 15 ft. high.

The Ginkgo, which is a most distinct and beautiful tree, was introduced into Europe from Japan in 1730, and from thence into England about 1750.

GLEDITSCHIA TRIACANTHOS Linnaeus. Honey Locust. (Family LEGUMINOSAE.) North America.

Loudon, ii. 650 (1838); Sargent, Silva, iii. 75 (1882); Elwes and Henry, vi, 1517 (1912); Bean, i. 596 (1914).

PLEASURE GROUNDS. No. 1353, a small tree 20 ft. by 2 ft. 3 in.

Var. *inermis* Pursh.

SILKWOOD. A variety without thorns represented by a small tree (No. 432) in the Broad Drive.

GYMNOCLADUS CANADENSIS Lamarck. Kentucky Coffee Tree. (Family LEGUMINOSAE.)

Loudon, ii. 656 (1838); Sargent, Silva, iii. 69 (1892) (as *G. dioicus* Koch); Elwes and Henry, ii. 428 (1907); Bean, i. 601 (1914).

Pleasure Grounds. An old tree (No. 1425) near the end of the Terrace, measuring 50 ft. by 4 ft. 10 in. at 4 ft. from the ground. A smaller tree (No. 1360) near the church.

Introduced into cultivation before 1750.

HALESIA DIPTERA Ellis. (Family Styraceae.) South-eastern United States.

Bean, i. 603 (1914).

Arboretum. Young plants in the Down Cover.

Introduced in 1758.

HAMAMELIS ARBOREA Masters. (Family Hamamelidaceae.) Japan.

Bean, i. 605 (1914) (as *H. japonica* var. *arborea*).

Arboretum. No. 79 in the Main Drive.

Silkwood. No. 688 in the Willesley Drive a splendid specimen which is more than 40 years old.

Introduced in 1862.

HAMAMELIS JAPONICA Siebold. Japanese Witch-Hazel. China, Japan.

Bot. Mag., t. 6659 (1882); Bean, i. 604 (1914).

Arboretum. Down Cover.

Var. *rubra* Hort.

Plants in the Down Cover.

Var. *Zuccariniana* Hort.

Arboretum. Margin of Down Cover (No. 255).

Silkwood. Four good plants in Sand Earth Corner.

HAMAMELIS MOLLIS Oliver. Chinese Witch-Hazel.

Bot. Mag, t. 7884 (1903); Bean, i. 605 (1914).

Several groups have been recently planted in the Arboretum and Silkwood. One of the most attractive of the winter flowering shrubs.

Introduced about 1879.

HIPPOPHAË RHAMNOIDES Linnaeus. Sea Buckthorn. (Family ELAEAGNACEAE.) Europe and Temperate Asia.

Bot. Mag., t. 8016 (1905); Bean, i. 620 (1914).

The Sea Buckthorn has been largely planted at Westonbirt, many notable groups being distributed throughout the Arboretum and Silkwood. The beauty of its glaucous foliage, and the copious crop of brilliant orange berries with which it is loaded in the autumn, make it one of the most remarkable of shrubs. The berries are not taken by the birds until they lose their astringency late in the winter, when the magpies greedily devour them.

The Sea Buckthorn is frequently seen without its crop of fruit, which makes it such a feature in the autumn landscape. Being a dioecious plant, it is necessary to include one or two males in each group.

The Sea Buckthorn is a native of the eastern counties of England, where it is found on the sandy coasts.

HOHERIA POPULNEA Cunningham. (Family MALVACEAE.) New Zealand.

Bean, i. 621 (1914).

A fine plant 23 ft. high on the stable wall, originally thought to be *Plagianthus Lyalli*, to which it is closely allied botanically. It flowers profusely in August.

Not definitely known in cultivation before 1901.

HYDRANGEA PETIOLARIS Siebold. (Family SAXIFRAGACEAE.) Japan.

Bot. Mag., t. 6788 (1884); Bean, i. 628 (1914).

PLEASURE GROUNDS. On trunk of tree by the lake, long cultivated as *Schizophragma hydrangeoides*.

Introduced in 1878.

HYPERICUM CALYCINUM Linnaeus. Rose of Sharon. (Family HYPERICACEAE.) Orient.

Bean, i. 634 (1914).

ARBORETUM, where it forms quite a dense carpet in many places.

Introduced in the latter part of the seventeenth century.

HYPERICUM ELATUM Aiton. Canary Islands.

Bean, i. 636 (1914).

ARBORETUM. Main Drive.

HYPERICUM HOOKERIANUM Wight. Sikkim, Himalaya, Assam.

Bot. Mag., t. 4949 (1856) (as *H. oblongifolium*); Bean, i. 637 (1914).

ARBORETUM. Clay Island and elsewhere.

HYPERICUM MOSERIANUM André. (*H. calycinum* × *patulum*.)

Bean, i, 638 (1914).

Walk, under Archway.

HYPERICUM PATULUM Thunberg. China, Japan, Himalayas.

Bot. Mag., t. 5693 (1868); Bean, i. 639 (1914).

Var. *Henryi* Veitch.

ARBORETUM. A group at Clay Island.

PLEASURE GROUNDS.

Introduced from China in 1898 by Prof. Henry. One of the best of the group.

The species was introduced from Japan by Oldham in 1862.

ILEX ALTACLARENSIS Dallimore. Highclere Holly. (Family AQUIFOLIACEAE.) Hybrid origin.

Loudon, ii. 507 (1838); Bean, i. 643 (1914); Dallimore, Holly, Yew, and Box, 139 (1908); Elwes and Henry, vii. 1713 (1913).

ARBORETUM. Several good plants, one (No. 915) in the Main Drive, measuring 45 ft. by 2 ft. 5 in.

PLEASURE GROUNDS. No. 1143.

ILEX AQUIFOLIUM Linnaeus. Common Holly. Europe (including Britain), West Asia.

Loudon, ii. 505 (1838); Elwes and Henry, vii. 1704 (1913); Bean, i. 642 (1913).

PLEASURE GROUNDS. No. 554 a very fine old holly, about 40 ft. high and 20 yards round.

Var. *albo-marginata* Loudon. Silver-leaved Holly. (Var. *argentea-marginata* Hort.)

ARBORETUM and PLEASURE GROUNDS. Nos. 825, 907, 967, and 1315.

Var. *angustifolia* Loudon.

PLEASURE GROUNDS. No. 1204 on the Terrace.

Var. *argentea marginata pendula* Hort. Perry's Weeping Holly.

ARBORETUM. Nos. 929 and 954 in the Main Drive, the latter a specimen 12 ft. high.

Var. *aureo-marginata* Loudon.

ARBORETUM and PLEASURE GROUNDS. Nos. 793, 921, and 934.

Var. *aureo-picta* Loudon. Golden Milkmaid.

ARBORETUM. Main Drive (No. 968). Stables.

PLEASURE GROUNDS. Several trees, including one (No. 1153) about 12 ft. high and 2 ft. in girth.

Var. *aurea-regina* Moore. Golden Queen.

PLEASURE GROUNDS. Near Sunken Garden.

Var. *crispa* Loudon. Screw-leaved Holly.

ARBORETUM. A good specimen (No. 935) in the Main Drive.

PLEASURE GROUNDS. Several specimens, including one (No. 1336) 12 ft. by 2 ft. 2 in.

Var. *ferox* Aiton. Hedgehog Holly.

PLEASURE GROUNDS. No. 1203 on the Terrace, and probably elsewhere.

This is believed to be the oldest known variety of the common holly, as it is mentioned by Parkinson in 1640 and was cultivated at Fulham as long ago as 1700.

Var. *ferox argentea* Loudon. Silver-striped Hedgehog Holly.

ARBORETUM. No. 794 in the Main Drive.

PLEASURE GROUNDS. Several specimens, including No. 1222, a bushy tree 1 ft. 10 in. in girth, near the Pergola.

Var. *ferox aurea* Loudon. Yellow-blotched Hedgehog Holly.

ARBORETUM. No. 980 in the Main Drive.

Var. *laurifolia sulphurea* Hort.

PLEASURE GROUNDS. No. 1169.

Var. *fructu-luteo* Loudon. Yellow-berried Holly.

ARBORETUM. A fine plant in Loop Walk, measuring 31 ft. in 1924. Other good plants elsewhere, including Pool Avenue.

PLEASURE GROUNDS.

Var. *ovata* Moore.

SILKWOOD. No. 1135 in the Willesley Drive.

Var. *pendula* Loudon. Weeping Holly.

ARBORETUM. Two well-grown plants (No. 896), at the end of the Specimen Avenue near the Down Pool. No. 932 near Wigmore Bottom.

PLEASURE GROUNDS. A superb plant on right entering Rockery, measuring 45 ft. round and 14 ft. high.

Var. *recurva* Aiton.

PLEASURE GROUNDS. A small specimen (No. 1198) in a bed by New Ground.

Var. *scotica* Moore.

Here and there in the Arboretum and Pleasure Grounds.

ILEX BALEARICA Desfontaines. (*I. Aquifolium* var. *platyphylla* Hort.) South Spain, Balearic Islands.

Loudon, ii. 516 (1838) (as *I. Aquifolium* var. *balearica*); Elwes and Henry, vii. 1703 (1913); Bean, i. 651 (1914).

ARBORETUM. No. 906 in the Main Drive appears to belong to this species or a hybrid *I. Aquifolium* × *balearica*.

Probably introduced about 1744.

ILEX CAMAELLIFOLIA Henry. Hybrid origin.

Elwes and Henry, vii. 1714 (1913); Bean, i. 643 (1914).

ARBORETUM. No. 848 in the Broad Avenue.

Four young specimens 3 ft. to 4 ft. high, planted at the entrance to Rattray's Nursery in 1924.

PLEASURE GROUNDS. Two fine plants near the church.

Young plant added 1922.

One of the handsomest of the hollies on account of its beautifully burnished foliage.

ILEX CRENATA Thunberg. Japanese Holly.

Bean, i. 645 (1914).

ARBORETUM. No. 227 at Clay Island.

Introduced about 1864.

ILEX DIPYRENA Wallich. Himalayan Holly.

Bean, i. 646 (1914).

ARBORETUM. An old specimen (No. 969) in the Main Drive is 25 ft. high and 4 ft. in girth, branching at 1 ft. into two main stems 2 ft. 6 in. in girth. It has a spread of 35 ft.

ILEX HODGINSI Dallimore. ? Hybrid origin.

Gard. Chron., Oct. 3, 1874, p. 433; Dallimore, Holly, Yew, and Box, 140 (1908); Elwes and Henry, vii. 1713 (1913); Bean, i. 644 (as *I. Aquifolium* var. *Hodginsi*).

ARBORETUM. Several good trees.

PLEASURE GROUNDS. No. 1249.

ILEX MUNDYI Dallimore. (? *I. platyphylla* var. *maderensis* × *Aquifolium* var.) Hybrid origin.

Elwes and Henry, vii. 1713 (1913); Bean, i. 644 (1914) (as *I. Aquifolium* var. *Mundyi*).

ARBORETUM. No. 922 in the Main Drive, a plant moved from the Old Nursery in 1925 when about 7 ft. high.

ILEX PERNYI Franchet. Central and West China.

Bean, i. 650 (1914).

Pleasure Grounds. No. 1219, near the Pergola, is a specimen 6 ft. high, and there are other specimens elsewhere.

A very neat dwarf evergreen named after Paul Perny, a French missionary, who discovered it in 1858.

Introduced by Wilson for Messrs. Veitch in 1900.

ILEX VERTICILLATA Gray. Black 'Alder'. Eastern North America.

Bean, i. 651 (1914).

Silkwood. An old specimen (No. 649) in Willesley Drive.

Introduced in 1736.

ITEA ILICIFOLIA Oliver. (Family Saxifragaceae.) West China.

Bean, i. 656 (1914).

Kitchen Garden Nursery. A plant received from Tregothnan.

Introduced into cultivation by Henry about thirty years ago.

JAMESIA AMERICANA Torrey. (Family Saxifragaceae.) Western North America.

Bot. Mag., t. 6142 (1875); Bean, i. 657 (1914).

Arboretum. Young plants in Victory Glade put out in 1922.

Introduced in 1862.

JASMINUM NUDIFLORUM Lindley. (Family Oleaceae.) China.

Bot. Mag., t. 4649 (1852); Bean, i. 660 (1914).

Pleasure Grounds. Wall of Italian Garden.

Introduced by Fortune in 1844.

JUGLANS NIGRA Linnaeus. Black Walnut. (Family Juglandaceae.) Canada and United States, east of the Rocky Mountains.

Loudon, iii. 1435 (1838); Sargent, Silva, vii. 121, tt. 333, 334 (1895); Elwes and Henry, ii. 262 (1907); Bean i. 666 (1914).

CUT-LEAVED WALNUT

In Garden

ARBORETUM. A tree in Loop Walk is 40 ft. high.

PLEASURE GROUNDS. The large tree (No. 1437) near the Sunken Garden was split by a gale in 1914, and is now leaning to one side. It is about 80 ft. high by 7 ft. 6 in. A smaller tree near the church, planted in 1898, is now 54 ft. 6 in. by 2 ft. 10 in.

SILKWOOD. No. 457 in the walnut collection in the Broad Drive is 46 ft. by 2 ft. 10 in. There are smaller trees elsewhere (Nos. 436, 520, and 714).

Introduced early in the seventeenth century.

JUGLANS REGIA Linnaeus. Common Walnut. Bosnia and Greece, through West Asia and Himalayas to North China.

Loudon, iii. 1423 (1838); Elwes and Henry, ii. 251 (1907); Bean, i. 666 (1914).

Common at Westonbirt, although there are no trees of unusual size. The doors and wainscoting of the central hall and drawing-rooms of Westonbirt House were, however, constructed from beautifully figured walnut cut from trees growing on outlying portions of the estate. There is a tree near a farm-house at Arlingham, two miles away, with a remarkable burr 12 ft. across.

Var. *laciniata* Loudon. Cut-leaved Walnut.

PLEASURE GROUNDS. A very handsome tree (No. 1274) by the Lake is 36 ft. 10 in. by 3 ft. 10 in. (Plate 31).

SILKWOOD. A small tree in Willesley Drive.

The common walnut has been known in cultivation for many centuries.

JUGLANS STENOCARPA Maximowicz. ? Manchuria.

Elwes and Henry, ii. 279 (1907); Bean, i. 668 (1914).

SILKWOOD. A tree with very large leaves No. 452 in the walnut collection near the Broad Drive appears to belong to this species. Planted about 1878 it is now 40 ft. high by 2 ft. 2 in. It was originally labelled *J. mandschurica*, but the foliage agrees well with that of trees named *J. stenocarpa* at Kew.

JUNIPERUS CHINENSIS Linnaeus. Chinese Juniper. (Family Pinaceae.) China, Mongolia, Japan.

Elwes and Henry, vi. 1430 (1912); Clinton-Baker, ii. 75; Bean, i. 669 (1914); Dallimore and Jackson, 237 (1923).

A common juniper at Westonbirt.

Arboretum. Three trees (No. 749) near Wigmore Clump, the tallest 46 ft. high.

Pleasure Grounds. No. 1142 near the Rockery, a tree 37 ft. 6 in. by 4 ft. 11 in. No. 1419 on the Terrace a tree 38 ft. high. A tree above the Sunken Garden is 40 ft. high.

Var. *albo-variegata* Veitch.

Pleasure Grounds. No. 1188 at New Ground.

Var. *japonica* Vilmorin.

Pleasure Grounds. No. 1187 at New Ground.

This species was introduced into cultivation in 1804.

JUNIPERUS COMMUNIS Linnaeus. Common Juniper. Europe, North Africa, Asia, and North America.

Loudon, iv. 2489 (1838); Elwes and Henry, vi. 1400 (1912); Clinton-Baker, iii. 11, No. 2 (1913); Dallimore and Jackson, 240 (1923).

Var. *hibernica* Gordon (var. *fastigiata* Parlatore). Irish Juniper.

Pleasure Grounds. No. 1155 on the lawn is an unusually fine specimen 24 ft. high. Another good specimen near the Sunken Garden.

Silkwood. No. 1029 near the East Gate is 18 ft. high.

JUNIPERUS CONFERTA Parlatore. Japan.

Clinton-Baker, iii. 18 (1913) (as *J. litoralis*); Wilson, Conifers of Japan, 83 (1916).

Arboretum. Down Cover; young plant put out about 1923.

First introduced about 1844.

JUNIPERUS EXCELSA Bieberstein. South-east Europe, Asia Minor, Caucasus.

Elwes and Henry, vi. 1446 (1913); Bean, i. 672 (1914); Dallimore and Jackson, 245 (1923).

JUNIPERUS VIRGINIANA

In Pleasure Grounds

ARBORETUM. Two trees near the Straight Drive, one (No. 772) measuring 30 ft. in height and bearing fruit.

Introduced probably about 1836.

JUNIPERUS PROCUMBENS Siebold. (*J. litoralis* Hort.)

Clinton-Baker, iii. 25 (1913); Elwes and Henry, vi. 1422 (1913); Bean, i. 674 (1914); Dallimore and Jackson, 255 (1923).

PLEASURE GROUNDS.

JUNIPERUS SABINA Linnaeus. Common Savin. Central and South Europe.

Loudon, iv. 2499 (1838); Elwes and Henry, vi. 1443 (1913); Clinton-Baker, iii. 26 (1913); Bean, i. 675 (1914).

PLEASURE GROUNDS. Large clumps by the Lake and elsewhere.

JUNIPERUS VIRGINIANA Linnaeus. Pencil Cedar. Eastern and Central United States.

Loudon, iv. 2495 (1838); Sargent, Silva, x. 93 (in part), t. 524 (1896); Clinton-Baker, ii. 75, No. 4 (1909); Elwes and Henry, vi. 1435 (1913); Bean, i. 677 (1914); Dallimore and Jackson, 263 (1923).

PLEASURE GROUNDS. The tree (No. 1154) near the Lake marking the site of the Old Rectory Gate at Westonbirt is a picturesque specimen of considerable age, measuring about 50 ft. high by 6 ft. 10 in. in girth (Plate 32). Another old tree (No. 1201) on the Terrace is 40 ft. high by 6 ft. at 2 ft. from the ground, where it divides into two stems.

Var *glauca* Knight.

ARBORETUM. Young trees planted in Middle Ride in 1923.

SILKWOOD. No. 1101 in the Willesley Drive.

Var. *Schotti* Gordon.

SILKWOOD. No. 1104 in the Willesley Drive.

KOELREUTERIA PANICULATA Laxmann. (Family SAPINDACEAE.) North China.

Loudon, i. 475 (1838); Elwes and Henry, vii. 1932 (1913); Bean, i. 685 (1913).

ARBORETUM. No. 144, in the Main Drive, has variegated foliage.

Introduced probably in 1763.

LABURNUM ALPINUM Presl. Scotch Laburnum. (Family Leguminosae.) Mountains of Central Europe.

Loudon, ii. 591 (1838) (as *Cytisus alpinus*); Elwes and Henry vi. 1521 (1913); Bean, ii. 2 (1914).

Arboretum. No. 67 in the Main Drive.

Known in cultivation for at least three hundred years.

LARIX EUROPAEA De Candolle. Common Larch. (Family Pinaceae.) Europe.

Loudon, iv. 2350 (1838); Elwes and Henry, ii. 349 (1907); Dallimore and Jackson, 283 (1923).

Arboretum. Several trees near Wigmore Bottom are 100 ft. high and up to 7 ft. in girth.

Silkwood. Good specimens here.

LARIX LEPTOLEPIS Endlicher. Japanese Larch.

Elwes and Henry, ii. 384 (1907); Clinton-Baker, ii. 58 (1909); Bean, ii. 8 (1914); Dallimore and Jackson, 288 (1923).

Silkwood. Experimental plantations of about two acres in extent planted by the late Mr. Holford in 1889. The tallest of these are now 40 ft. high and free from disease.

Introduced by J. G. Veitch in 1861.

LAURUS NOBILIS Linnaeus. Bay Laurel. (Family Lauraceae.)

Loudon, iii. 1297 (1838); Bean, ii. 10 (1914).

Pleasure Grounds.

This well-known shrub has been in cultivation since the sixteenth century. It is the laurel of the ancients.

LEYCESTERIA FORMOSA Wallich. (Family Caprifoliaceae.) Himalaya.

Bot. Mag., t. 3699 (1839); Bean, ii. 21 (1914).

Pleasure Grounds. No. 1393 in shrubbery near New Ground.

Introduced in 1824.

LIBOCEDRUS AND ORIENTAL PLANE

In Arboretum

GROUP OF LIBOCEDRUS

In Broad Ride

LIBOCEDRUS DECURRENS Torrey. Incense Cedar. (Family PINACEAE.) Oregon, California.

Sargent, Silva, x. 135, t. 534 (1896); Elwes and Henry, iii. 489 (1908); Bean, ii. 23 (1914); Dallimore and Jackson, 302 (1923).

ARBORETUM. Has been largely planted here, the best specimen (height and girth combined) being No. 983 in the Main Ride between the Pool and Down Cover, measuring 66 ft. by 7 ft. 2 in. There is a taller tree, No. 1010 a, in Loop Walk measuring 76 ft. by 6 ft. 7 in., and we only know of one tree in England which exceeds it in height. Another specimen (No. 767) opposite Wigmore Bottom (Plate 33) is 63 ft. by 7 ft. 4 in. No. 818 in the Main Drive is 62 ft. by 6 ft. 8 in. A group of young trees in the Broad Ride, planted in 1910, are growing vigorously, and are now about 18 ft. high (Plate 34).

Middle Ride. Young trees planted about 1922.

PLEASURE GROUNDS. A tree (No. 1331), east of the Lake, is 62 ft. by 7 ft. 4 in.

SILKWOOD. Vigorous young trees.

Introduced in 1853.

LIGUSTRUM JAPONICUM Thunberg. Japanese Privet. (Family OLEACEAE.) North China, Corea, Japan.

Bean, ii. 26 (1914).

PLEASURE GROUNDS. No. 1350, near the church.

ARBORETUM. Near the large Parrotia in Pool Avenue.

Introduced into Europe in 1845.

LIGUSTRUM LUCIDUM Aiton. China.

Bot. Mag., t. 2565 (1825); Bean, ii. 26 (1914).

PLEASURE GROUNDS. Nos. 1286 and 1287, near the village end.

Introduced in 1794.

LIGUSTRUM SINENSE Loureiro. Chinese Privet.

Bean, ii. 28 (1914).

ARBORETUM. No. 354 in the Down Cover. No. 831 in Middle Ride.

Stable Clump. No. 1453, a fine plant, 16 ft. high. One of the

most ornamental of the deciduous privets when in flower in July, when it bears masses of white flowers.

Introduced from China by Fortune about 1852.

LIQUIDAMBAR STYRACIFLUA Linnaeus. Sweet Gum. (Family Hamamelidaceae.) Eastern United States.

Loudon, iv. 2049 (1838); Sargent, Silva, v. 10, t. 199 (1893); Elwes and Henry, iii. 500 (1908).

Downs. A fine shapely tree on the right before entering gate into Down Wood opposite the group of horse chestnuts. This is 52 ft. high by 4 ft. 10 in. in girth (Plate 35).

Pleasure Grounds. No. 1221, near the Pergola, is an old tree, 35 ft. high by 3 ft. 10 in. in girth, which has been much damaged by gales. The foliage, which is almost a golden green in summer, turns a beautiful rose pink in autumn.[1] No. 1272, near the Rockery, is a tree 30 ft. high by 2 ft. 10 in., which has lost its top, the foliage of which takes on brilliant shades of crimson and orange, variegated at first with green. No. 1323, east of the Lake, is a young tree planted in 1920, and now about 10 ft. high.

A tall thin tree in clump at end of the Conservatory, facing an Atlas Cedar, measures 54 ft. 2 in. by 2 ft. 10 in.

Another good tree which colours superbly in autumn stands in the clump facing the Library west window, and measures 31 ft. by 2 ft. 4 in.

Introduced in the seventeenth century.

LIRIODENDRON CHINENSE Sargent. Chinese Tulip Tree. (Family Magnoliaceae.)

Gard. Chron., Nov. 28, 1903, p. 370; Elwes and Henry, i. 64 (1906); Bean, ii. 34 (1914).

Arboretum. No. 307, a young tree, in Victory Glade.

The foliage of the Chinese Tulip tree is very like that of the American species, but the leaves are more glaucous on the under surface, and the lobing is deeper and more obtuse. The flowers are smaller in size.

First discovered in China in 1875, and introduced into cultivation in 1901.

[1] Cut down in 1926.

LIQUIDAMBAR STYRACIFLUA

Near Down Gate

LIRIODENDRON TULIPIFERA Linnaeus. Tulip Tree. North America.

Loudon, i. 284 (1838); Sargent, Silva, i. 19, tt. 13, 14 (1891); Elwes and Henry, i. 65 (1906); Bean, ii. 35 (1914).

ARBORETUM. No. 141 in the Main Drive is a tree 75 ft. by 6 ft. 8 in. The tulip trees, planted on each side of the Main Avenue about twenty years ago, include twenty-eight trees, varying from 35 to 40 ft. high. They are making vigorous growth. There is another good tree in Acer Grove, measuring 61 ft. by 4 ft. 10 in.

PLEASURE GROUNDS. A handsome tree (No. 1218) near the Pergola, measuring 75 ft. by 7 ft. 10 in.

SILKWOOD. Several trees in Willesley Drive.

Introduced in the seventeenth century before 1688.

LONICERA GLAUCESCENS Rydberg. (Family CAPRIFOLIACEAE.) North America.

Bean, ii. 42 (1914).

PLEASURE GARDENS. Wall of Italian Garden.

LONICERA LEDEBOURII Eshcholtz. California.

Bot. Mag., t. 8555 (1914); Bean, ii. 48 (1914).

ARBORETUM. No. 131 in the Main Drive.

Introduced in 1858.

LONICERA MAACKII Maximowicz. Manchuria, China.

Bean, ii. 49 (1914).

Walk under Archway.

Introduced from China by Wilson in 1900.

LONICERA NITIDA Wilson. Western China.

Bean, ii. 51 (1914).

SILKWOOD. No. 363, clump near the Waste Gate.

Introduced in 1908.

LONICERA PILEATA Oliver. China.

Bot. Mag., t. 8060 (1906); Bean, ii. 52 (1914).

Old Nursery.
Introduced in 1900.

LONICERA SYRINGANTHA Maximowicz. China and Thibet.

Bot. Mag., t. 7989 (1904); Bean, ii. 56 (1914).

ARBORETUM. Groups of plants raised from seed are in the Wigmore Field and elsewhere. One of the most attractive shrubs of recent introduction on account of its delightfully fragrant flowers.
Introduced about 1890.

LONICERA THIBETICA Bureau and Franchet. Thibet.

Bean, ii. 57 (1914).

Walk under Archway.
Introduced in 1897.

MAGNOLIA ACUMINATA Linnaeus. Cucumber Tree. (Family MAGNOLIACEAE.)

Bot. Mag., t. 2427 (1823); Loudon, i. 273 (1838); Elwes and Henry, vi. 1586 (1912); Bean, ii. 67 (1914).

ARBORETUM. No. 135, in the Main Drive, is a tree 37 ft. high by 2 ft. 2 in. in girth.

PLEASURE GROUNDS. An exceptionally fine and shapely specimen on the Lawn is 68 ft. by 6 ft 7 in. (Plates 36 and 37). It was planted about 1875. In 1906 it was 62 ft. by 5 ft. 9 in. This tree was formerly nearly split to the ground, but has been so well repaired by hoops round the trunk that the two parts have now grown together. No. 1269, a tree in a shrubbery near the Rockery, is 35 to 40 ft. high by 3 ft. 5 in. There are smaller specimens elsewhere.

SILKWOOD. Good trees in Willesley Drive and Broad Drive, centre circle.

MAGNOLIA CAMPBELLI Hooker and Thomson. Eastern Himalayas.

Illust. Him. Plants, tt. 4, 5 (1855); Bot. Mag., t. 6793 (1885); Elwes and Henry, vi. 1590 (1912); Bean, ii. 67 (1914).

MAGNOLIA ACUMINATA

In Pleasure Grounds. (Winter)

MAGNOLIA ACUMINATA

In Pleasure Grounds. (*Summer*)

This fine Magnolia surpasses all the other species in the size and beauty of its flowers. A healthy specimen 18 ft. high, which used to stand on the wall between the Stables and the Glass Houses, facing south, was moved to Loop Walk (Arboretum) in the autumn of 1924. There is another plant about 20 ft. high against the head gardener's house, facing west. Both are about twenty years old, but neither have yet produced flowers.

Magnolia Campbelli will only thrive in the milder parts of England. Introduced in 1880.

MAGNOLIA CONSPICUA Salisbury. Yulan. China.

Bot. Mag., t. 1621 (1814); Loudon, i. 278 (1838) (as *M. Yulan*); Elwes and Henry, vi. 1596 (1912); Bean, ii. 67 (1914).

ARBORETUM. Numerous specimens.

The milk-white flowers produced in early spring before the leaves make this one of the most beautiful of flowering trees, though the flowers are often injured by frosts and cold winds.

Introduced into England by Sir Joseph Banks in 1789.

Var. *Brozzoni* Hort.

A late and very fine form of *M. conspicua* with large, erect white flowers. Two good plants in Pool Avenue.

MAGNOLIA CORDATA Michaux. (*M. acuminata*, var. *cordata* Sargent.) North America.

Bot. Reg., t. 325 (1818); Loudon, i. 275 (1838); Elwes and Henry, vi. 1586 (1912); Bean, ii. 68 (1914).

PARK. An old and broken tree (No. 1444 a) in the East Lodge Clump, measuring 30 ft.

Introduced in 1801.

MAGNOLIA DELAVAYI Franchet. Yunnan, South-west China.

Bot. Mag., t. 8282 (1909); Bean, ii. 69 (1914).

ARBORETUM. No. 210 at Clay Island, a small tree. Two others on left of Drive, and at Hornbeam Corner.

Stable Wall. A fine specimen, planted about 1905, which has made vigorous growth, and is now 18 ft. high. The young plants mentioned above, in the Arboretum, are layers from this tree.

Introduced by Wilson in 1899.

MAGNOLIA DENUDATA Lamarck. China.

Loudon, i. 282 (1838) (as *M. purpurea*); Bot. Mag., t. 390 (1797) (as *M. purpurea*); Elwes and Henry, vi. 1597 (1912); Bean, ii. 72 (1914) (as *M. obovata*).

Arboretum. Young plants in the Down Cover.

Introduced from Japan in 1790.

MAGNOLIA FRASERI Walter. South-eastern United States.

Loudon, i. 276 (1838); Sargent, Silv. i. 15, tt. 11, 12 (1890); Elwes and Henry, vi. 1590 (1912); Bean, ii. 69 (1914).

Arboretum. Young plant received from Cannizaro, Wimbledon, in 1923, and planted in the Down Cover.

This handsome species, although introduced very early—in 1786—is very uncommon in gardens.

MAGNOLIA GRANDIFLORA Linnaeus. South-eastern United States.

Loudon, i. 261 (1838); Sargent, Silva, i. 3, tt. 1, 2 (1890) (as *M. foetida*): Elwes and Henry, vi. 1583 (1912); Bean, ii. 70 (1914).

Pleasure Grounds. The three old plants on the south wall of the house were put in about 1880, and are now 20 ft. high. The largest has a stem 2 ft. 11 in. in girth at the base. Other trees on the south wall of the Italian Garden.

This is the oldest species in cultivation, having been introduced probably before 1737. It is occasionally grown as a standard tree.

MAGNOLIA HYPOLEUCA Siebold and Zuccarini. China and Japan.

Bot. Mag., t. 8077 (1906); Elwes and Henry, vi. 1592 (1912); Bean, ii. 70 (1914).

Arboretum. A tree (No. 319) in Loop Walk is 15 ft. high, and produced flowers in 1921. Young plants in Down Cover.

Introduced in 1884.

MAGNOLIA KOBUS De Candolle. Japan.

Bot. Mag., t. 8428 (1912); Elwes and Henry, vi. 1594 (1912); Bean, ii. 71 (1914).

ARBORETUM. No. 269 in the Main Drive near Acer Grove is a specimen, 15 ft. high.

Introduced in 1879.

MAGNOLIA LENNEI Van Houtte. Hybrid origin. (? *M. conspicua* × *denudata*.)

Fl. des Serres, xvi, tt. 1693, 1694 (1867); Elwes and Henry, vi. 1596 (1912); Bean, ii. 71 (1912).

ARBORETUM. No. 313 in Loop Walk. Numerous other specimens elsewhere. 14 ft.

PLEASURE GROUNDS. A fine specimen on the lawn near the house is about 20 ft. high, with a spread of 18 ft. No. 1311 near the Lake. Another in west bastion of centre steps on lawn below big yew.

MAGNOLIA PARVIFLORA Siebold and Zuccarini. Japan.

Bot. Mag., t. 7411 (1895); Elwes and Henry, vi. 1598 (1912); Bean, ii. 72 (1914).

ARBORETUM. Two young plants at Clay Island.

PLEASURE GROUNDS. A small plant on the west bastion wall bears numerous flowers.[1]

A handsome species, which is apparently hardy at Westonbirt.

Introduced to Kew in 1893.

MAGNOLIA ROSTRATA W. W. Smith. W. China.

Notes, Bot. Gard., Edinb., xii. 213 (1920).

ARBORETUM. Young plant in Loop Walk raised from Farrer's seed, and planted 1925.

MAGNOLIA SALICIFOLIA Maximowicz. Japan.

Elwes and Henry, vi. 1595 (1912); Bot. Mag., 8483 (1913); Bean, ii. 73 (1914).

ARBORETUM. Young plants in the Down Cover.

Introduced in 1906.

MAGNOLIA SARGENTIANA Rehder and Wilson.

Pl. Wils., i. 398 (1913).

ARBORETUM. Young plant in Down Cover planted out about 1920.

[1] In 1924 it had at least 60 blooms.

MAGNOLIA SOULANGIANA Soulange-Bodin. Hybrid origin. (*M. conspicua* × *denudata.*)

Bot. Reg., t. 1164 (1828); Loudon, i. 278 (1838); Elwes and Henry, vi. 1596 (1912); Bean, ii. 74 (1914).

Pleasure Grounds. No. 1409, on the Terrace, a fine spreading specimen 18 ft. high and over 60 ft. round. Wall of Stable, an old plant about 23 ft. high.

Raised about 1820.

Arboretum. Numerous groups in Victory Glade, &c.

Var. *nigra* Veitch.

Arboretum. Several large groups in Victory Glade. Clay Island.

Pleasure Grounds. No. 1254.

Var. *rustica* Hort.

Down Cover. Young plants.

MAGNOLIA STELLATA Maximowicz. Japan.

Bot. Mag., t. 6370 (1878); Elwes and Henry, vi. 1599 (1912); Bean, ii. 74 (1904).

Largely planted at Westonbirt.

Arboretum. Groups in Wigmore Bottom, and in Down Cover.

Pleasure Grounds. A large old plant on the far side of the lake has a spread of 10 ft.

Introduced about 1877.

MAGNOLIA THOMPSONIANA Koch. (*M. glauca* × *tripetala.*)

Bot. Mag., t. 2164 (1820); Elwes and Henry, vi. 1585 (1912); Bean, ii. 75 (1914).

Pleasure Grounds. An old plant on a bank overhanging the Sunken Garden. It flowered in August, 1924.

First raised in 1808.

MAGNOLIA TRIPETALA Linnaeus. Umbrella Tree. Eastern North America.

Loudon, i. 269 (1838); Sargent, Silva, i. 13, tt. 9, 10 (1890); Elwes and Henry, vi. 1588 (1912); Bean, ii. 75 (1914).

Arboretum. A good specimen (No. 323) in Loop Walk, measuring 27 ft. by 1 ft. 2 in.

Introduced into cultivation in 1752.

MAGNOLIA VEITCHII P. C. M. Veitch. (*M. Campbelli* × *conspicua*.)
Garden origin.

Journ. Roy. Hort. Soc., xlvi. 321. (1921).

ARBORETUM. Young plants in the Down Cover.

A very beautiful hybrid with large ivory white flowers, 5 in. long. It is of special interest from the fact that it is the first artificially raised hybrid.

First raised in 1907.

MAGNOLIA WATSONI Hooker. ? hybrid origin.

Bot. Mag., t. 7157 (1891); Gard. Chron., Aug. 18, 1894, April 27, 1895, p. 516, fig. 72; Elwes and Henry, vi. 1598 (1912); Bean, ii. 75 (1914).

ARBORETUM. No. 320 in Loop Walk. No. 330 in the Down Cover is 14 ft. high. Young plants in the Down Cover.

Introduced in 1889.

MAGNOLIA WILSONI Rehder. West China.

Pl. Wils. i. 395 (1913).

ARBORETUM. Young plants in Loop Walk raised from seed.

NEILLIA OPULIFOLIA Bentham and Hooker fil. Nine Bark. (Family ROSACEAE.) Eastern North America.

Bean, ii. 94 (1914).

ARBORETUM. No. 17 near the entrance to the Arboretum. No. 94 in the Main Drive.

PLEASURE GROUNDS. No. 1366, by the Sunk Fence.

Introduced according to Aiton in 1687.

Var. *lutea* Hort.

PLEASURE GROUNDS.

NOTHOFAGUS ANTARCTICA Oerstedt. (Family FAGACEAE.) South America, from Tierra del Fuego northwards to Chiloë.

Bot. Mag., t. 8314 (1910) (as *Fagus antarctica*); Elwes and Henry, iii. 553 (1908).

SILKWOOD. Two young plants put out in 1924.

First introduced in 1830.

NOTHOFAGUS CUNNINGHAMI Oerstedt. Tasmania.

Elwes and Henry, iii. 550 (1908); Bean, ii. 100 (1914).

ARBORETUM. A small plant in the Down Cover.

NOTHOFAGUS DOMBEYI Blume. Chile.

Elwes and Henry, iii. 555 (1908).

Young plant received from Exbury in 1924.

Introduced in 1917 by Mr. F. R. S. Balfour, who obtained seeds from a native locality.

NOTHOFAGUS OBLIQUA Blume. Roble Beech. Chile.

Elwes and Henry, iii. 552 (1908); Bean, ii. 97 (1914).

ARBORETUM. A group of three young trees at the end of the Straight Drive on the left. A young specimen planted in Wigmore Bottom in 1923. Another specimen planted in Wigmore Bottom in 1924 when 12 ft. high. Victory Glade, several flourishing young trees.

SILKWOOD. West side of the Broad Drive, planted 1922.

This is one of the most promising of the more recent South American introductions. It is growing vigorously in most gardens, and has borne seed at Kew and Tortworth, where it has attained 30 ft. or more in height.

Introduced in 1849 by Lobb and again in 1902 by Elwes. None of the trees raised from Lobb's seed seem to have survived.[1]

NOTHOFAGUS PROCERA Oerstedt. Chile.

Elwes and Henry, iii. 546 and 555 (1908).

ARBORETUM. Three young plants in Victory Glade. Another in Wigmore Bottom, planted in 1924 when 13 ft. high.

Introduced in 1910 by F. R. S. Balfour and apparently quite hardy.

NYSSA SYLVATICA Marshall. Black Gum, Tupelo. (Family CORNACEAE.) Eastern North America.

Loudon, iii. 1317 (1838) (as *N. villosa*); Sargent, Silva, v. 75, t. 217 (1893); Elwes and Henry, iii. 509 (1908); Bean, ii. 103 (1914).

[1] All the trees of *Nothofagus obliqua* and *N. procera* at Westonbirt were raised from seed obtained by Mr. F. R. S. Balfour in South Chile in 1910, and distributed by him from 1914 onwards.

ARBORETUM. No. 206 in the Specimen Avenue is a small plant which is making very slow growth.

Ten young plants imported from Messrs. Hicks's nursery at Westbury, Long Island, New York, America, in March, 1922, are now thriving at Westonbirt. Two of these were put out in Middle Ride in 1923, and another in Clay Island the same year. Young seedlings from Sheffield Park are also doing well.

OLEARIA HAASTII Hooker fil. (Family COMPOSITAE.) New Zealand.

Bot. Mag., t. 6592 (1881); Bean, ii. 105 (1914).

PLEASURE GROUNDS. A clump of this shrub (No. 1210), on the left before entering the Italian Garden, makes a good display when flowering in late summer.

Introduced in 1858 by Veitch of Exeter, and now common in cultivation.

OSMANTHUS AQUIFOLIUM Siebold. (Family OLEACEAE.) Japan.

Bean, ii. 110 (1914).

PLEASURE GROUNDS.

Var. *myrtifolius* Nicholson.

PLEASURE GROUNDS. No. 544, near the house.

Var. *aureo-marginatus* Hort.

PLEASURE GROUNDS. Not uncommon.

OSMANTHUS DELAVAYI Franchet. China.

Bot. Mag., t. 8459 (1912); Bean, ii. 111 (1914).

ARBORETUM. Victory Glade.

PLEASURE GROUNDS. A thriving plant near the big *Arbutus Menziesii*. Another plant near the church.

A very distinct and charming little shrub, especially during its flowering period in the spring.

Introduced into European cultivation in 1890.

OSTRYA CARPINIFOLIA Scopoli. Hop Hornbeam. (Family Betulaceae.) South Europe, Asia Minor, Syria.

Loudon, iii. 2015 (1838) (as *O. vulgaris*); Elwes and Henry, iii. 541 (1908); Bean, ii. 115 (1914).

Arboretum. No. 104 in the Main Drive, a small tree.

The Hop Hornbeam, although introduced before 1724, is rare in cultivation, and few trees of any size are known.

OSTRYA VIRGINICA Willdenow. Ironwood, American Hop Hornbeam. Eastern North America.

Loudon, iii. 2015 (1838); Sargent, Silva, ix. 34, t. 445 (1886); Elwes and Henry, iii. 543 (1908).

Arboretum. No. 224, at Clay Island, is an old tree, 35 ft. 6 in. by 2 ft. 6 in. in girth. The twigs are only slightly glandular, and this tree may be near the var. *eglandulosa* Spach, but this is said not to be in cultivation. Some botanists consider *O. virginica* a variety of *O. carpinifolia*.

The American Hop Hornbeam was introduced by Bishop Compton in 1692.

OXYDENDRON ARBOREUM De Candolle. Sorrel Tree. (Family Ericaceae.) Eastern North America.

Bot. Mag., t. 905 (1806) (as *Andromeda arborea*); Bean, ii. 117 (1914).

Arboretum. Down Cover.

Introduced in 1752.

PARROTIA PERSICA C. A. Meyer. (Family Hamamelidaceae.) North Persia to the Caucasus.

Bot. Mag., t. 5754 (1868); Bean, ii. 123 (1914).

This shrub has been extensively planted at Westonbirt for its superb autumn colouring.

Arboretum. A large Parrotia (No. 1280), 15 ft. high by 2 ft. 3 in. in girth at 3 ft. from the ground with a spread of 28 ft. (Plate 38), was successfully moved from the garden to a site opposite Wigmore Bottom in March 1922. Another fine plant (No. 300), in Pool Avenue, 14 ft. by 2 ft. with a spread of 36 ft., formerly stood in the Pleasure Grounds. It has been moved three times during the last ten years.

PARROTIA PERSICA

In Arboretum

PAULOWNIA

In Specimen Avenue

PLEASURE GROUNDS. The best specimen is No. 1390, near the Sunk Fence, measuring 12 ft. by 2 ft. 5 in. at 1 ft. with a spread of 27 ft. Another fine specimen is on the East Bastion centre walk.

SILKWOOD. Two magnificent specimens in Willesley Drive, planted about 1880, one (No. 672) measuring 22 ft. 6 in. high by 2 ft. 6 in. in girth with a spread of 26 ft., and the other 24 ft. 9 in. high with a girth of 2 ft. 3 in. and 37 ft. 6 in. spread.

Introduced to Kew about 1841.

PAULOWNIA IMPERIALIS Siebold. (Family SCROPHULARIACEAE.)

China.

Bot. Mag., t. 3853 (1852); Elwes and Henry, vi. 1493 (1912) (as *P. tomentosa*); Bean, ii. 125 (1914).

ARBORETUM. Tree (No. 59) on left of drive behind the tree of *Ostrya carpinifolia*. No. 205, in the Specimen Avenue, is making vigorous growth and is now (1923) 26 ft. high by 1 ft. 2 in. in girth. It produces immense leaves, some of which, including the stalk, are 18 in. long (Plate 39). This tree was raised from Wilson's seed collected by him in Hupeh in 1908, and described as var. *lanata* by the French dendrologist Dode (*Bull Soc. Bot. Dendr.*, France, 1908, p. 160). It grows much faster and seems hardier than the typical form.

PARK. No. 1475, a small tree in the corner of the Garden Plantation. A tree which used to stand in the East Lodge clump, quoted by Elwes (loc. cit., 1494) to be the tallest in England, no longer exists, having died after the great drought in 1921. When measured by Mr. A. Chapman, the late gardener, in 1911, it was 56 ft. by 7 ft. at 3 ft. from the ground.

PLEASURE GROUNDS. No. 1214, an old tree near the east end of the house, is 38 ft. 6 in. by 4 ft. 9 in. at 4 ft. from the ground.

The *Paulownia* was introduced from Japan to France in 1834.

PERNETTYA MUCRONATA. Gaudichaud. (Family ERICACEAE.)

Magellanic region.

Bot. Mag., t. 8023 (1905); Bean, ii. 128 (1914).

PLEASURE GROUNDS. Clump near the lake.

One of the most attractive berry-bearing shrubs in cultivation.

Introduced in 1828.

PHILADELPHUS DELAVAYI L. Henry (Family SAXIFRAGACEAE).
West China.
Rev. Hort. 12 (1910). Bean, ii. 134 (1914).
Young plants (Forrest, 1917 seed) received from Woburn in 1924.

PHILLYREA ANGUSTIFOLIA Linnaeus. (Family OLEACEAE.)
South Europe, North Africa.
Bean, ii. 142 (1914).
Var. *rosmarinifolia* Aiton.
PLEASURE GROUNDS. Shrubbery at New Ground (No. 1190).
The species was cultivated in England before 1600.

PHILLYREA DECORA Boissier. Persia.
Bot. Mag., t. 6800 (1885) (as *P. Vilmoriana*); Bean, ii. 142 (1914).
PLEASURE GROUNDS. A well-grown plant (No. 1177) on the Terrace.
Introduced into English gardens about 1880.

PHILLYREA LATIFOLIA Linnaeus. South Europe, North Africa.
Bean, ii. 142 (1914).
PLEASURE GROUNDS. No. 1152 near the Rockery. No. 1407 on the Terrace.
Known as a garden plant in England since the sixteenth century.

PHILLYREA MEDIA Linnaeus. (*P. latifolia* var. *media* Schneider.)
Bean, ii. 143 (1914).
South Europe, North Africa.
ARBORETUM. Nos. 788 and 958 in the Main Drive.
PLEASURE GROUNDS. No. 1146. No. 1175, on the Bastion, is an old specimen with a stem 2 ft. 7 in. in girth.
SILKWOOD. No. 602a in Willesley Drive is an old plant with stem 2 ft. 1 in. in girth at 2 ft. from the ground. It is 16 ft. high, and branches into two main stems.
Garden Plantation.

PHOTINIA VILLOSA De Candolle. (Family ROSACEAE.) Japan, China, Korea.
Bean, ii. 145 (1914).

ARBORETUM. No. 314 in Loop Walk. 'Texas'.

The leaves often turn a beautiful red in autumn, the colouring being exceptionally fine in 1923.

PHYLLOSTACHYS AUREA Rivière. (Family GRAMINEAE.) Japan.

Bean, ii. 149 (1914).

ARBORETUM. Bamboo collection, Down Cover.

In cultivation for about half a century.

PHYLLOSTACHYS CASTILLONIS Mitford. Japan.

Bean, ii. 150 (1914).

ARBORETUM. Thicket in the centre of the Down Cover.

Introduced about 1890.

PHYLLOSTACHYS MITIS Rivière. Japan.

Bean, ii. 151 (1914).

ARBORETUM. Bamboo collection in the Down Cover.

Introduced about 1890.

PHYLLOSTACHYS NIGRA Munro. Black-stemmed Bamboo. China and Japan.

Loudon, iv. 2532 (1838); Bean, ii. 152 (1914).

ARBORETUM. Bamboo collection, Down Cover.

PLEASURE GROUNDS.

Introduced about a century ago.

PHYLLOSTACHYS QUILIOI Rivière. Japan.

Bean, ii. 152 (1914).

ARBORETUM. Bamboo collection, Down Cover.

Introduced by Admiral Du Quilio in 1866.

PHYLLOSTACHYS VIRIDI-GLAUCESCENS Rivière. China.

Gard. Chron., April 7 (1894), p. 433, t. 53; Bean, ii. 153 (1914).

ARBORETUM. Bamboo collection in the Down Cover.

PLEASURE GROUNDS. Behind Stables.

Introduced to France about 1846.

PICEA ALBA Link. White Spruce. (Family PINACEAE.) Canada, Northern United States.

Loudon, iv. 2310; Clinton-Baker, ii. 34 (1909); Elwes and Henry, vi. 1380 (1912); Bean, ii. 155 (1914); Dallimore and Jackson, 311 (1923).

SILKWOOD. No. 1074, in the Willesley Drive, a tree 30 ft. by 2 ft. 8 in.

Var. *caerulea* Carrière.

A small tree (No. 1083) in the Willesley Drive probably comes under this variety.

PICEA ALBERTIANA Stewardson-Brown. British Columbia to Wyoming and Alberta.

Var. *conica* Bean. Alberta.

Gard. Chron., May 7 and 28 (1921); Dallimore and Jackson, 314 (1923).

Rattray's Nursery.

A most distinct and interesting pigmy conifer only recently introduced into cultivation.

PICEA ASPERATA Masters. Western China.

Pl. Wils. ii. 22 (1914); Dallimore and Jackson, 316 (1923).

ARBORETUM. Young plants put out in the Middle Ride and Pool Avenue, 1923.

A recent introduction from China which seems to thrive better in Great Britain than any other Chinese spruce.

PICEA BICOLOR Mayr. Japan.

Elwes and Henry, vi. 1372 (1912); Clinton-Baker, ii. 35 (1909); Bean, ii. 155 (1914) (as *P. Alcockiana*); Wilson, Conifers of Japan, 42 (1916).

ARBORETUM. No. 858, in the Specimen Avenue, is a tree 36 ft. by 3 ft. in girth. There is also a smaller specimen, 23 ft. high, in the same avenue, on the left-hand side going west.

SILKWOOD. A tree (No. 1110) in Willesley Drive, long known as *P. Alcockiana;* is 32 ft. 6 in. by 2 ft. 7 in. Another specimen (No. 1123), also in Willesley Drive, is 30 ft. by 2 ft. 4 in.

Introduced by J. G. Veitch in 1861.

PICEA BREWERIANA Watson. Brewer's Weeping Spruce. Siskiyou Mountains of Oregon and California.

Sargent, Silva, xii. 51, t. 601 (1898); Elwes and Henry, i. 82 (1906); Clinton-Baker, ii. 36 (1909); Bean, ii. 156 (1914); Dallimore and Jackson, 320 (1923).

ARBORETUM. Young plant in Victory Glade put out about 1923. Others planted here and in Pool Avenue during 1925.[1]

SILKWOOD. Six young plants put out in 1924.[1]

One of the most interesting and distinct of the newer spruces in cultivation. It was introduced to Kew in 1897. The trees in Great Britain are now becoming large enough to show the beautiful weeping habit which characterizes Brewer's spruce in its American home.

PICEA EXCELSA Link. Norway Spruce. Europe.

Loudon, iv. 2293 (1838) (as *Abies excelsa*); Clinton-Baker, ii. 38 (1909); Elwes and Henry, vi. 1337 (1912); Bean, 157 (1914); Dallimore and Jackson, 324 (1923).

Common at Westonbirt, where trees over 100 ft. high are growing in the Arboretum and elsewhere.

Var. *aurea* Carrière.

ARBORETUM. A handsome young tree in the Specimen Avenue, 27 ft. high. In spring the foliage assumes a beautiful golden hue.

Var. *inverta* Gordon.

SILKWOOD. No. 1084, in the Willesley Drive; a striking plant, with branches pressed close to the stem and trailing on the ground.

Dwarf forms, including the var. *Clanbrassiliana*, have been planted on the rockery in the Pleasure Grounds and elsewhere.

The Norway spruce was in cultivation in England as early as 1548, and was therefore one of the first conifers to be introduced into this country.

PICEA JEZOENSIS Carrière. Japan.

Bot. Mag., t. 6743 (1884) (as *Picea ajanensis*); Elwes and Henry, i. 85 (1907); Clinton-Baker, ii. 33 (1909); Dallimore and Jackson, 331 (1923).

ARBORETUM. No. 809, in the Main Drive opposite Wigmore Bottom, is 40 ft. by 3 ft. 3 in.

[1] Raised from seed collected at Siskiyou Mountains by Mr. F. R. S. Balfour.

Silkwood. No. 1078, in the Willesley Drive. No. 1120, also in the Willesley Drive, is 51 ft. by 4 ft. No. 1114, in the same drive, is 44 ft. by 4 ft.

Introduced by J. G. Veitch in 1861.

PICEA MORINDA Link. West Himalayan Spruce.

Loudon, iv. 2317 (1838); Clinton-Baker, ii. 40 (1909); Elwes and Henry, vi. 1366 (1912); Bean, ii. 158 (1914); Dallimore and Jackson, 337 (1923).

Arboretum. A fine tree (No. 882) in Specimen Avenue measures 75 ft. by 6 ft.

There are smaller trees in Silkwood and elsewhere.

Introduced in 1818.

PICEA MORINDOIDES Rehder. East Himalayan Spruce. (*P. spinulosa* Henry.)

Elwes and Henry, i. 77 (1906) and vi. 1392 (1912); Bot. Mag., t. 8169 (1907); Clinton-Baker, ii. 50 (1909); Bean, ii. 159 (1914); Dallimore and Jackson, 339 (1923).

The existence of this rare spruce at Westonbirt was unknown until 1922, when a small tree (No. 933 a) was discovered in the Arboretum more or less hidden in a shrubbery between the Main Drive and the Specimen Avenue. It is 32 ft. high by 1 ft. 7 in. in girth.

This spruce has been much confused with the common *Picea Morinda*, and on this account may turn out to be more frequent in cultivation than was at first supposed.

Only about a dozen trees are known in cultivation, and it was first detected in the British Isles at Castlewellan, Ireland.

Introduced into cultivation about 1878.

PICEA NIGRA Link. Black Spruce. North Eastern America.

Loudon, iv. 2312 (1838) (as *Abies nigra*); Sargent, Silva, xii. 28, t. 596 (1898) (as *Picea Mariana*); Clinton-Baker, ii. 41 (1909); Elwes and Henry, vi. 1375 (1912); Bean, ii. 160 (1914); Dallimore and Jackson, 340 (1923).

Silkwood. A tree (No. 1077) 40 ft. by 3 ft. 3 in. in Willesley Drive.

Introduced about 1700.

PICEA ORIENTALIS

In Specimen Avenue

PICEA OMORIKA Bolle. Servian Spruce. Servia, Bosnia.

Elwes and Henry, i. 78 (1907); Clinton-Baker, ii. 43 (1909); Bean, ii. 161 (1914); Dallimore and Jackson, 343 (1923).

ARBORETUM. No. 868, a small tree in Specimen Avenue which bore cones in 1921. A young tree was planted in Specimen Avenue in 1921. Other small specimens since planted elsewhere.

Introduced in 1889.

PICEA ORIENTALIS Carrière. Oriental Spruce. Caucasus, Asia Minor.

Loudon, iv. 2318 (1838) (as *Abies orientalis*); Clinton-Baker, ii. 44 (1909); Elwes and Henry, vi. 1362 (1912); Bean, ii. 161 (1914); Dallimore and Jackson, 345 (1923).

This is one of the most ornamental spruces in cultivation, and there are several large and shapely specimens at Westonbirt.

ARBORETUM. Two beautiful trees (Nos. 855 and 885) of perfect shape, in the Specimen Avenue, measure respectively 77 ft. by 7 ft. 3 in. and 75 ft. by 7 ft. 8 in. (Plate 40). No. 912, in the Main Drive opposite Clay Island, measures 62 ft. by 5 ft. 2 in. Other specimens in Pool Avenue.

Middle Ride. Young tree planted in 1923.

SILKWOOD. Two well-grown trees on opposite sides in the Willesley Drive.

Introduced in 1839.

PICEA POLITA Carrière. Japan.

Clinton-Baker, ii. 45 (1909); Elwes and Henry, vi. 1370 (1912); Wilson, Conifers of Japan, 36 (1916); Bean, ii. 162 (1924), Dallimore and Jackson, 347 (1923).

ARBORETUM. There are two good trees in Specimen Avenue, one (No. 873) measuring 23 ft. by 2 ft. 2 in.

SILKWOOD. No. 1128, in the Willesley Drive; a small specimen which coned in 1921.

Introduced by J. G. Veitch in 1861.

PICEA PUNGENS Engelmann. Colorado Spruce. North America.

Clinton-Baker, ii. 46 (1909); Elwes and Henry, vi. 1389 (1912); Bean, ii. 163 (1914); Dallimore and Jackson, 349 (1923).

SILKWOOD. Two good specimens (Nos. 1032 and 1033) near the Waste Gate, one measuring 31 ft. by 2 ft. 4 in. Another tree in the

Willesley Drive is 38 ft. by 2 ft. 3 in. No. 1085, a still larger specimen, also in Willesley Drive, is 42 ft. by 3 ft. 2 in.

Var. *glauca* Regel. Blue Spruce.

This is much commoner in cultivation than the type, and one of our most ornamental conifers when in good condition. There are, however, one or two exceptionally good examples of it at Westonbirt.

Arboretum. A tree 35 ft. high is in Specimen Avenue.

Pleasure Grounds. No. 1159, beyond the Rockery, facing the Lake, is 21 ft. by 1 ft. 3 in. and a handsome specimen.

Generally speaking this is a disappointing tree. Lovely when young, owing to its intensely glaucus hue, it often loses its colour later and becomes unhealthy on attaining a height of from six to twelve feet.

Var. *glauca pendula* Beissner.

Arboretum. No. 806 in the Main Drive.

Pleasure Grounds. A well-grown plant of particularly good colour, on the Lawn near the village end of the garden. It was about 22 ft. high in 1925.

First cultivated in England about 1877 by Waterer, who propagated it in his nursery at Knaphill by cuttings taken from a tree in Professor Sargent's garden at Brookline, Mass.

PICEA RUBRA Link. Red Spruce. North America.

Loudon, iv. 2316 (1838) (as *Abies rubra*); Sargent, Silva, xii. 33, t. 597 (1898) (as *Picea rubens*); Clinton-Baker, ii. 47 (1900); Elwes and Henry, vi. 1337 (1912); Bean, ii. 164 (1914); Dallimore and Jackson, 350 (1923).

Silkwood. A small unhealthy spruce (No. 1076) in Willesley Drive apparently belongs to this species.

Introduced before 1755.

PICEA SITCHENSIS Carrrière. Sitka Spruce. Pacific Coast of North America.

Loudon, iv. 2321 (1838) (as *Abies Menziesii*); Sargent, Silva, xii. 55, t. 602 (1898); Elwes and Henry, i. 92 (1906); Clinton-Baker, ii. 49 (1909); Bean, ii. 164 (1914); Dallimore and Jackson, 352 (1923).

Arboretum. No. 883, in the Specimen Avenue, is the tallest

Sitka spruce we know at Westonbirt, measuring 90 ft. by 7 ft. No. 992, in Pool Avenue, is a tree measuring 71 ft. by 8 ft. 10 in. No. 829, in Middle Ride, is 63 ft. by 4 ft. 10 in.

SILKWOOD. A group of three trees (No. 1062) in the Broad Drive includes one which is 84 ft. 8 in. by 6 ft. 3 in.

According to Sargent this spruce extends farther north-west than any other North American conifer.

Introduced into cultivation in 1831 by David Douglas.

PIERIS FLORIBUNDA Bentham. (Family ERICACEAE.) South-eastern United States.

Bot. Mag., t. 1566 (1813) (as *Andromeda floribunda* Pursh.); Bean, ii. 165 (1914).

ARBORETUM. A bed of plants in the Down Cover.

PLEASURE GROUNDS. No. 1195, near the Sunk Fence.

Introduced in 1800.

PIERIS FORMOSA D. Don. Himalayas.

Bot. Mag., t. 8283 (1909); Bean, ii. 166 (1914).

ARBORETUM. Clumps up to 12 ft. high in the Down Cover.

PIERIS JAPONICA D. Don. Japan.

Bean, ii. 167 (1914).

ARBORETUM. Clumps in the Down Cover.

PINUS ARMANDI Franchet. (Family PINACEAE.) Western China, Formosa.

Clinton-Baker, i. 6 (1909); Elwes and Henry, v. 1043 (1910); Bean, ii. 172 (1914); Dallimore and Jackson, 370 (1923).

ARBORETUM. No. 874, in Specimen Avenue, a young tree planted about 1914 and now about 10 ft. high. It is growing vigorously. Small specimens in the Down Cover.

SILKWOOD. Young plants.

Introduced about 1897.

PINUS AYACAHUITE Ehrenberg. Mexican White Pine.

Clinton-Baker, i. 8 (1909); Shaw, Pines of Mexico, 9, t. iv (1909); Elwes and Henry, v. 1017 (1910); Bean, ii. 173 (1914); Dallimore and Jackson, 371 (1923).

ARBORETUM. Entrance of Down Cover. No. 970, planted about 1875, was 70 ft. by 7 ft. 2 in. in 1921. In 1909 it measured 62 ft. by 6 ft. 8 in. (Plate 41). Numerous seedlings have been raised from this tree, which cones freely.[1]

Other groups of home-raised trees in Broad Ride and Middle Ride. No. 869, in Specimen Avenue, a tree grown from seed of No. 970, was 47 ft. by 3 ft. 4 in. in 1921. This tree, which was apparently in perfect health, died suddenly in June 1921.

SILKWOOD. A group of six young trees (No. 1068) in the Broad Drive were raised from seed of No. 970, and planted in 1906; tallest tree, 33 ft. 6 in. by 2 ft. 6 in. in 1921. Other groups in Willesley Drive.

The typical form of this species was introduced by Hartweg in 1848, and again in 1857 by Roezl. It succeeds best in the milder climate of the West of England, where the largest trees are found. The mature cones, which are often a foot or more long, are very distinct in appearance, owing to their reflexed basal scales.

PINUS BUNGEANA Zuccarini. Lace-bark Pine. China.

Bot. Mag., t. 8240 (1909); Clinton-Baker, 1, 11 (1909); Elwes and Henry, v. 1050 (1910); Bean, ii. 175 (1914); Dallimore and Jackson, 375 (1923).

ARBORETUM. Young specimen in the Down Cover.

A very distinct pine on account of its vivid green foliage and smooth bark. It is of very slow growth, and none of the trees in cultivation are old enough to show the chalky-white bark which makes it so striking a tree near Peking.

Introduced by Fortune in 1846.

PINUS CEMBRA Linnaeus. Arolla Pine. Alps of Central Europe, Siberia.

Loudon, iv. 2274 (1838); Clinton-Baker, i. 14 (1909); Elwes and Henry, v. 1035 (1910); Bean, ii. 176 (1914); Dallimore and Jackson, 381 (1923).

[1] One of the cones from this tree was 22 in. in length.

PINUS AYACAHUITE

In Arboretum

PINUS CONTORTA, var. MURRAYANA

In Silkwood

ARBORETUM. Nos. 787 and 851 are respectively in the Main Drive and Specimen Avenue.

PLEASURE GROUND. An unusually good specimen (No. 1240) on the Lawn near the House is 50 ft. high by 5 ft. 2 in. No. 548, a smaller tree, 35 ft. high.

SILKWOOD. No. 1042, in the Pine collection in the Waste.

Introduced in 1746.

PINUS CONTORTA Loudon. Western North America.

Loudon, iv. 2292 (1838); Sargent, Silva, xi. 89, t. 567 (1897); Elwes and Henry, v. 1134 (1910); Bean, ii. 177 (1914); Dallimore and Jackson, 385 (1923).

ARBORETUM. No. 833, a small stunted specimen in Middle Ride.

SILKWOOD. Two trees, Nos. 1106 and 1136, in the Willesley Drive.

Var. *Murrayana* Engelmann. Lodge Pole Pine. Rocky Mountains, Sierra Nevada.

All the finest trees of *Pinus contorta* at Westonbirt are probably best referred to the var. *Murrayana*, which cannot be considered as specifically distinct from *P. contorta* for intermediate forms occur. The following trees planted about 1870 may be regarded as somewhat in that category, as they have the scaly bark of typical *Murrayana* but the slender foliage of *P. contorta*.

ARBORETUM. No. 941, opposite Clay Island. This tree is mentioned by Elwes in 1909 as the largest in the country, measuring 59 ft. by 4 ft. 7 in. Since then its top has been blown out, but it still measures 46 ft. by 4 ft. 11 in. (1924). Another tree (No. 991), in Pool Avenue, mentioned at the same time as 50 ft. by 3 ft. 3 in., is now 56 ft. by 4 ft. 3 in.

SILKWOOD. No. 1041, on left, half-way up the Waste, a tree about 40 ft. high by 4 ft. A well-shaped tree of pyramidal habit (No. 1070) stands in the Broad Drive, measures 45 ft. by 5 ft. 2 in. (Plate 42). This tree is also figured at plate xx of Dallimore and Jackson's 'Handbook of Conifers'. Another larger specimen (No. 1107) in Willesley Drive is 55 ft. 6 in. by 5 ft. 4 in.

This species was introduced in 1855, and the variety *Murrayana* in 1853 or 1854.

PINUS COULTERI Don. California.

Loudon, iv. 2250 (1838); Sargent, Silva, xi. 99, tt. 571, 572 (1897); Clinton-Baker, i. 17 (1909); Elwes and Henry, v. 1067 (1910); Bean, ii. 177 (1914); Dallimore and Jackson, 387 (1923).

ARBORETUM. Four young plants put out in Middle Ride in 1923.

SILKWOOD. No. 1044, in the Pine collection in the Waste, probably belongs to this species, but in the absence of the characteristic cones is difficult to identify with certainty.

Introduced by Douglas in 1832.

PINUS DENSIFLORA Siebold and Zuccarini. Japan.

Clinton-Baker, i. 18 (1909); Elwes and Henry, v. 1125 (1910); Dallimore and Jackson, 388 (1923).

ARBORETUM. Young tree planted in the Middle Ride in 1923.

Introduced in 1861.

PINUS EXCELSA Wallich. Himalayas.

Loudon, iv. 2285 (1838); Clinton-Baker, i. 20 (1909); Elwes and Henry, v. 1011 (1910); Bean, ii. 178 (1914); Dallimore and Jackson, 391 (1923).

ARBORETUM AND PARK. Many well-grown specimens, the finest being one (No. 743) in the West Lodge clump by the high road, measuring 90 ft. by 5 ft. 10 in.

PLEASURE GROUNDS. No. 1172, an unusually tall specimen near the Church, is 91 ft. by 8 ft.

SILKWOOD. Numerous well-grown trees.

Introduced in 1832.

PINUS FLEXILIS James. Limber Pine. Western North America.

Sargent, Silva, xi. 35, tt. 546, 547 (1897); Clinton-Baker, i. 21 (1909); Elwes and Henry, v. 1046 (1910); Bean, ii. 179 (1914); Bot. Mag., t. 8467; Dallimore and Jackson, 394 (1923).

ARBORETUM. Two young trees in the Middle Ride put out in 1922.

Introduced in 1851.

PINUS INSIGNIS

At Arboretum Gate

PINUS KORAIENSIS

In Silkwood

PINUS INSIGNIS Douglas. Monterey Pine.

Loudon, iv. 2265 (1838) ; Clinton-Baker, i. 26 (1909) ; Elwes and Henry, v. 1079 (as *Pinus radiata*) ; Bean, iii. 189 (1914) (as *P. radiata*) ; Dallimore and Jackson, 444 (1923) (as *P. radiata*).

ARBORETUM. A very fine and shapely tree near the Entrance Gate on right, facing the road, is about 90 ft. high (Plate 43). No. 951, in the Main Drive, measures 85 ft. by 6 ft. Another handsome tree (No. 962) between the Pool and Down Cover, facing entrance to the Loop Walk, measures 89 ft. by 9 ft. 8 in. No. 1016, at the commencement of the Down Cover, is 75 ft. by 11 ft. 4 in.

PLEASURE GROUNDS. No. 1435, near the Sunken Garden, is over 80 ft. high and 9 to 10 ft. in girth.

Many trees have been planted in the Arboretum and Silkwood. Two such groups in the Willesley Drive have made rapid growth during the past ten years, the tallest being now about 35 ft. high, and their bright grass-green foliage is in striking contrast to more sombre conifers.

Introduced by Douglas in 1833.

PINUS KORAIENSIS Siebold and Zuccarini. Corea, Japan, Manchuria.

Clinton-Baker, i. 28 (1909) ; Elwes and Henry, v. 1041 (1910) ; Bean, ii. 182 (1914) ; Dallimore and Jackson, 401 (1923).

SILKWOOD. No. 1129, in Willesley Drive, is a tree 31 ft. high by about 2 ft. in girth. It produced cones in 1922, the seeds of which were sown but only two germinated. The tree was probably planted about 1880 (Plate 44).

Pinus koraiensis, which is one of the rarest pines in cultivation, was introduced in 1861 from a Japanese nursery by J. G. Veitch. It resembles *P. Cembra* in its foliage, but the cones are quite distinct.

PINUS LAMBERTIANA Douglas. Sugar Pine. Oregon, California.

Loudon, iv. 2288 (1838) ; Sargent, Silva, xi. 27, t. 542 (1897) ; Clinton-Baker, i. 29 (1909) ; Elwes and Henry, v. 1020 (1910) ; Bean, ii. 182 (1914) ; Dallimore and Jackson, 402 (1923).

ARBORETUM. No. 861, in the Specimen Avenue, a well-grown tree 76 ft. by 6 ft., planted about 1867.[1] It produced several cones in 1924.

[1] An old cone 16 in. long preserved at Westonbirt is probably from this tree.

A specimen (No. 1013) in Loop Walk was 57 ft. by 4 ft. 6 in., but died in 1921. No. 1023, in the Down Cover, is a tree about 20 ft. high.

Introduced by Douglas in 1827.

PINUS LARICIO Poiret. Corsican Pine. Europe, Asia Minor.

Loudon, iv. 2200 (1838); Clinton-Baker, i. 30 (1909); Elwes and Henry, ii. 407 (1907); Bean, ii. 183 (1914); Dallimore and Jackson, 405 (1923).

Arboretum. No. 742, a specimen known as Cottle's Pine, near the Entrance Gate, is 76 ft. by 7 ft. 9 in. No. 877, in the Specimen Avenue, a tree 82 ft. by 7 ft. Several Corsican pines in the Arboretum are about 100 ft. high.

Park. Several exceptionally fine trees near the Main Carriage Drive, one (No. 1426 a)—which is among the tallest trees at Westonbirt—measuring 106 ft. by 7 ft. 6 in. Another specimen in the clump opposite Wigmore Bottom is 90 ft. 6 in. by 7 ft. 8 in.

A clump of three very fine Corsican pines near the Cricket Ground includes a specimen 101 ft. by 8 ft. 4 in., and another tree 95 ft. high with a much stouter bole, 11 ft. 6 in. in girth.

Introduced in 1759.

Var. *austriaca* Endlicher. (*P. austriaca* Voss.) Austrian Pine.

Common at Westonbirt.

Near the Old Lodge Clump is a very large Austrian Pine, measuring 92 ft. by 12 ft. 3 in.

Introduced in 1835.

Var. *Pallasiana* Endlicher.

This variety is represented by a very fine specimen of candelabra-like form in the Park (No. 1434 a), facing the house, measuring 80 ft. in height by 11 ft. 3 in. in girth, with a spread of 84 ft., the other, near the gardener's house, being 86 ft. by 9 ft. 3 in. There are smaller specimens in the Arboretum.

Var. *tenuifolia* Parlatore. (Var. *pyrenaica* Grenier and Godron.) Pyrenees and Cevennes.

Silkwood. No. 1053, in the Pine collection, between the Waste Gate and Broad Drive.

PINUS LEUCODERMIS Antoine. Bosnian Pine. Bosnia, Herzegovina, Montenegro.

Clinton-Baker, i. 31 (1909); Elwes and Henry, ii. 424 (1907); Dallimore and Jackson, 412 (1923); Bean, ii. 183 (1914).

ARBORETUM. Young plant in Victory Glade.

This pine is closely allied to *P. Laricio*, and is probably only a mountain form of that species.

Introduced in 1864.

PINUS MONTANA Miller. Mountain Pine. Mountains of Central and Southern Europe.

Loudon, iv. 2186 (1838) (as *P. pumilio*); Clinton-Baker, i. 34 (1909); Elwes and Henry, v. 1127 (1910); Bean, ii. 184 (1914); Dallimore and Jackson, 417 (1923).

ARBORETUM. No. 956, between the Pool and the Down Cover.

PLEASURE GROUNDS. No. 1200, on the Terrace, a specimen of considerable age.

SILKWOOD. Groups on both sides of the Drive near the Waste Gate. Another group (No. 1137) near the village end of Willesley Drive.

All the specimens of the Mountain Pine at Westonbirt are shrubby in habit, producing many stems without a definite leader, and probably belong to the var. *pumilio* (*P. pumilio* Haenke).

First cultivated in England in 1779.

PINUS MONTEZUMAE Lambert. Mexico.

Loudon, iv. 2272 (1838); Shaw, Pines of Mexico, 21, t. xiv (1909); Clinton-Baker, i. 35 (1909); Elwes and Henry, v. 1061 (1910); Bean, ii. 185 (1914); Dallimore and Jackson, 419 (1923).

ARBORETUM. A small tree (No. 990) 12 ft. high in Pool Avenue, planted about 1917.

Var. *rudis* Shaw.

Shaw, Pines of Mexico, 22, t. xvi. with figs. (1909); Elwes and Henry, iv. 1062 (1909).

The old tree (No. 1445) in the front of the East New Lodge Clump, is about 55 ft. high by 5 ft. 5 in. in girth. It was planted about 1855, and according to Elwes was 45 ft. high in 1909. It has always been referred to the var. *Hartwegi*, which is the hardiest form of *P. Montezumae*, but we consider it to be nearer the variety *rudis* on account of the leaves being five and occasionally six in a cluster, and the cones (which

are freely produced) turning brown when mature. In the variety *Hartwegi* the leaves are described as being in threes or fours, and the cones almost black when ripe.

Pinus Montezumae was introduced into cultivation in 1839.

PINUS MONTICOLA Don. Western North America.

Loudon, i. 2291 (1838); Sargent, Silva, xi. 23, tt. 540, 541 (1897); Clinton-Baker, i. 36 (1909); Elwes and Henry, v. 1022 (1910); Bean, ii. 185 (1914); Dallimore and Jackson, 422 (1923).

ARBORETUM. No. 973, in the Main Drive near the Down Cover, a tree 72 ft. by 7 ft. 6 in., was long considered to be a Weymouth Pine, but is undoubtedly *P. monticola.*

PARK. An unusually fine specimen (No. 1427 a) in Western New Lodge Clump is probably one of the tallest trees in the country, being 93 ft. high by 6 ft. 4 in. in girth. It was planted about 1850. In 1908 we made it 90 ft. by 6 ft. 2 in.

SILKWOOD. Two trees (No. 1131) in the Willesley Drive, the largest 64 ft. by 4 ft. 5 in. One has lost its top.

Introduced by Douglas about 1832.

PINUS MURICATA Don. Bishop's Pine. Coast of California.

Loudon, iv. 2269 (1838); Sargent, Silva, xi. 139, tt. 585, 586 (1897); Clinton-Baker, i. 37 (1909); Elwes and Henry, v. 1104 (1910); Bean, ii. 185 (1914); Dallimore and Jackson, 424 (1923).

ARBORETUM. A tree (No. 832), in Middle Ride, is the only specimen we know of at Westonbirt. It is 57 ft. high by 4 ft. 8 in. in girth.

This species was introduced into cultivation in 1846.

PINUS PARVIFLORA Siebold and Zuccarini. Japan.

Clinton-Baker, i. 40 (1909); Elwes and Henry, v. 1033 (1910); Wilson, Conifers of Japan, 22 (1916); Dallimore and Jackson, 428 (1923).

ARBORETUM. Two smallish trees (No. 838) in Middle Ride are of the var. *glauca.* Other small plants elsewhere.

Introduced by J. G. Veitch in 1861.

PINUS PATULA Schlechtendal and Chamisso. Mexico.

Loudon, iv. 2266 (1838); Clinton-Baker, i. 41 (1909); Shaw, Pines of Mexico, 29, xxii (1909); Elwes and Henry, v. 1085 (1910); Dallimore and Jackson, 429 (1923).

Young plant added 1925.

Introduced about 1837.

PINUS PEUKE

In Silkwood

PINUS PEUKE Grisebach. Macedonian Pine. Bulgaria, Macedonia, Montenegro.

Clinton-Baker, i. 42 (1909); Elwes and Henry, v. 1014 (1910); Dallimore and Jackson, 30 (1923).

ARBORETUM. No. 1022, in the Down Cover. Dimensions 50 ft. by 4 ft. 9 in.

SILKWOOD. Two good trees (No. 1133) in the Willesley Drive, the tallest measuring 53 ft. 6 in. by 4 ft. 8 in. (Plate 45). They were planted in 1878.

Introduced about 1863.

PINUS PINASTER Solander. Cluster Pine. Mediterranean region.

Loudon, iv. 2213 (1838); Clinton-Baker, i. 43 (1909); Elwes and Henry, v. 1113 (1910); Dallimore and Jackson, 432 (1923).

ARBORETUM. No. 856, in the Specimen Avenue, is a tree 69 ft. by 5 ft. 8 in. No. 959, between the Pool and the Down Cover.

PLEASURE GROUNDS. No. 555, in shrubbery at end of Conservatory, a tree 65 ft. by 6 ft. 9 in.

SILKWOOD. No. 1055, near the Broad Drive. Two good trees in the Willesley Drive.

PINUS PONDEROSA Lawson. Yellow Pine. Western North America.

Loudon, iv. 2243 (1838); Sargent, Silva, xi. 77, tt. 560, 561 (1897); Clinton-Baker, i. 45 (1909); Elwes-Henry, v. 1071 (1910); Bean, ii. 188 (1914); Dallimore and Jackson, 437 (1923).

ARBORETUM. Largely planted throughout the Arboretum, one (No. 881) in the Specimen Avenue measuring 86 ft. by 6 ft. Another tree (No. 982), in the Main Drive between the Pool and the Down Cover, is 75 ft. high. No. 1019, in the Down Cover, is a tree between 80 and 90 ft. high.

Var. *Jeffreyi* Vasey. (*Pinus Jeffreyi* Balfour.)

ARBORETUM. Several trees in the Straight Drive, one (No. 744) being 80 ft. high by 5 ft. 3 in. Several specimens are past their best and dying at the top. A tree (No. 893) in the Specimen Avenue is 70 ft. high by 5 ft. 9 in. in girth.

The species was introduced in 1827 by Douglas, and the var. *Jeffreyi* by Jeffrey in 1853.

PINUS PUNGENS Lambert. Eastern North America.

Loudon, iv. 2197 (1838); Sargent, Silva, xi. 135, t. 584 (1897); Clinton-Baker, i. 47 (1909); Elwes and Henry, v. 1106 (1910); Bean, ii. 189 (1914); Dallimore and Jackson, 443 (1923).

SILKWOOD. No. 1116, a small tree in the Willesley Drive, bears this name, but is difficult to identify with certainty in the absence of cones.

Introduced in 1804.

PINUS RESINOSA Solander. Eastern North America from Nova Scotia to Pennsylvania.

Loudon, iv. 2210 (1838); Sargent, Silva, xi. 67, tt. 555, 556 (1897); Clinton-Baker, i. 48 (1909); Elwes and Henry, v. 1140 (1910); Bean, ii. 190 (1914); Dallimore and Jackson, 446 (1923).

SILKWOOD. No. 1115, in the Willesley Drive, is a small tree which has grown very slowly, and has so far produced no cones.

This pine, which represents *P. sylvestris* in Canada, is very rarely seen in cultivation.

It was introduced in 1756.

PINUS RIGIDA Miller. Northern Pitch Pine. Eastern North America.

Loudon, iv. 2239 (1838); Sargent, Silva, xi. 115, t. 579 (1897); Clinton-Baker, i. 49 (1909); Elwes and Henry, iv. 1087 (1910); Bean, ii. 190 (1914); Dallimore and Jackson, 447 (1923).

SILKWOOD. A shapely tree (No. 1069) near the corner of the Broad Drive and Willesley Drive is 39 ft. 6 in. by 3 ft. 2 in., and is the only specimen known at Westonbirt.

Introduced before 1759.

PINUS STROBUS Linnaeus. Weymouth Pine. Eastern North America.

Loudon, iv. 2280 (1838); Sargent, Silva, xi. 17, tt. 538, 539 (1897); Clinton-Baker, i. 52 (1909); Elwes and Henry, v. 1025 (1910); Bean, ii. 191 (1914); Dallimore and Jackson, 453 (1923).

ARBORETUM. There are good examples of Weymouth Pine in the Down Cover and elsewhere, one (No. 1018) being 86 ft. by 8 ft. 6 in.

SILKWOOD. Nos. 1048 and 1049, in the Pine collection in the Waste. Several groups in Broad Drive and Willesley Drive.

Introduced in 1705.

OLD SCOTS PINES

In Pleasure Grounds

PINUS SYLVESTRIS Linnaeus. Scots Pine. Europe, Asia Minor, Caucasus, Siberia.

Loudon, iv. 2153 (1838); Elwes and Henry, iii. 571 (1908); Clinton-Baker, i. 53 (1909); Bean, ii. 191 (1914); Dallimore and Jackson, 456 (1923).

Has been extensively planted at Westonbirt.[1] Among other noteworthy specimens are four very old trees in the Pleasure Grounds, near where the stream leaves the garden. The tallest of these measures 76 ft. by 7 ft. 3 in., and one has a girth of 8 ft. 2 in. (Plate 46).

Var. *aurea* Beissner.

A striking variety, in which the foliage assumes a golden yellow tint in autumn and winter but becomes green again in the spring.

Pleasure Grounds. Three remarkably good specimens, no. 1202, near the Sunken Garden, being 12 ft. high by 1 ft. 2 in. in girth, and another (No. 1341), near the village end, about the same height.

PINUS TAEDA Linnaeus. Loblolly Pine. New Jersey to Florida and Texas.

Loudon, iv. 2237 (1838); Forbes, Pinet. Woburn, 43, t. 14 (1839); Sargent, Silva, xi. 111, tt. 577 (1897); Clinton-Baker, i. 54 (1909); Elwes and Henry, v. 1094 (1910); Dallimore and Jackson, 463 (1923).

Arboretum. Two young plants in Victory Glade, received from Wakehurst in 1921.

Although known for more than two centuries in this country, having been introduced in 1713 by Bishop Compton, large trees are hardly ever seen.

PINUS THUNBERGI Parlatore. Japan.

Clinton-Baker, i. 55 (1909); Elwes and Henry, v. 1143 (1910); Bean, ii. 192 (1914); Dallimore and Jackson, 466 (1923).

Silkwood. Two trees planted in 1880 (Nos. 1111 and 1111 a) in

[1] In the Down Cover are numerous very fine specimens of which the age is known to the year. They were planted by the late Mr. Holford in 1829, and have made wonderful growth in the deep sandy soil. The tallest is about 90 ft. high and the average girth 8 ft. 9 in.

the Willesley Drive, identified in 1921, had long been labelled *Pinus Massoniana*, a Chinese species not in cultivation. The tallest is 46 ft. by 4 ft. 3 in.

Introduced by J. H. Veitch in 1861.

PINUS TORREYANA Parry. California.

Sargent, Silva, xi. 71, tt. 557, 558 (1897); Clinton-Baker, i. 56 (1909); Elwes and Henry, v. 1065 (1910); Dallimore and Jackson, i. 468 (1923).

Arboretum. Two young trees in Victory Glade, received from Wakehurst, Sussex, in 1921.

This pine has a more limited distribution than any other species, being found in only two places on the coast of South California. It is too tender for general cultivation in Britain.

PITTOSPORUM TENUIFOLIUM Banks. (*P. Mayi* Hort.) (Family Pittosporaceae.) New Zealand.

Bean, ii. 197 (1914).

Pleasure Grounds. No. 1181, on the Bastion.

A very striking shrub on account of its blackish shoots and pale shining green foliage.

PLAGIANTHUS LYALLI Hooker fil. (Family Malvaceae.)

Bot. Mag., t. 5935 (1871); Bean, ii. 199 (1914).

Arboretum. No. 350, in Loop Walk. Two plants in Down Cover, and others elsewhere.

Var. *glabrata* Watson.

Arboretum. Two plants in the Down Cover.

PLATANUS ACERIFOLIA Willdenow. London Plane. (Family Platanaceae.) Origin uncertain.

Loudon, iv. 2034 (1923); Elwes and Henry, iii. 614 (1908); Henry in Proc. Roy. Irish Acad., xxxv, Sect. B, No. 2 (1919); Bean, ii. 201 (1914).

Arboretum. Three good trees in Wigmore Bottom, 70 ft. to 80 ft. high.

Pleasure Grounds. An old tree (No. 1430), near the Sunken

is the largest London plane at Westonbirt. It is 80 ft. high, the top being much bent over, and 6 ft. 5 in. in girth.

PARK. In West Lodge Clump there stands a London plane, 85 ft. high, with a remarkably straight and slender bole.

SILKWOOD. Trees in Willesley Drive.

PLATANUS ORIENTALIS Linnaeus. Oriental Plane. South-west Europe, Asia Minor.

Loudon, iv. 2033 (1838); Elwes and Henry, iii. 614 (1908); Bean, ii. 203 (1914).

ARBORETUM. No. 189, in the Main Drive, measuring 72 ft. by 6 ft. 2 in. No. 768, in front of Wigmore Bottom in the drive, is a striking tree, 55 ft. by 5 ft. 3 in. There are other good trees in the Arboretum and Silkwood.

Var. *cuneata* Loudon.

SILKWOOD. Two young trees are growing in the Broad Drive.

The species was introduced before 1562.

POLYGONUM BALDSCHUANICUM Regel. (Family POLYGONACEAE.) Bokhara.

Bot. Mag., t. 7544 (1897); Bean, ii. 208 (1924).

PLEASURE GROUNDS. Wall of Italian Garden. Kitchen Garden, trained up Scots pine.

Introduced about 1894.

POPULUS ALBA Linnaeus. White Poplar. (Family SALICACEAE.) Europe, North Africa, Asia, Himalayas.

Loudon, iii. 1638 (1838); Elwes and Henry, vii. 1777 (1913); Bean, ii. 210 (1914).

PARK. By Ballast Clump there is a tree 80 ft. high by 5 ft. 9 in. This is exceptionally tall for the white poplar, which is usually only of quite small dimensions in England.

SILKWOOD. Two old trees stand near the Waste Gate entrance to the wood. One of these is 76 ft. 6 in. in height by 4 ft. 6 in. In the Willesley Drive there is a tree (No. 569) which is 60 ft. by 2 ft. 11 in.

The white poplar is not truly wild in England as is sometimes supposed, and the date of introduction is uncertain.

POPULUS ANGULATA Aiton. Carolina Poplar. South-eastern United States.

Loudon, iii. 1670 (1838); Elwes and Henry, vii. 1810 (1913); Bean, ii. 211 (1914).

Var. *cordata* Hort.

Young plants in various places.

The species was cultivated in England in 1738.

POPULUS CANDICANS Aiton. Ontario Poplar. Origin uncertain.

Loudon, iii. 1676 (1838); Elwes and Henry, vii. 1834 (1913); Bean, ii. 212 (1914).

SILKWOOD. Nos. 469 and 1524, in the Broad Drive.

Introduced in 1772.

POPULUS EUGENEI Simon Louis. ? Hybrid origin. (*P. italica* × *marilandica*.)

Elwes and Henry, vii. 1826 (1913); Bean, ii. 214 (1914).

ARBORETUM. Two trees at Wigmore Bottom, and others elsewhere.

PARK. Three young trees planted in the meadow, opposite Pickard's Lodge, in 1921.

SILKWOOD. Group of young trees in Didmarton Grove.

The extraordinary vigour of this poplar is indicated by the growth of the original tree at Metz, which, planted about 1837, was 150 ft. high and 38 ft. in girth at the base in 1908.

POPULUS GENEROSA Henry. Hybrid origin. (*P. angulata* × *trichocarpa*.)

Gard. Chron., Oct. 17, 1914, p. 258.

ARBORETUM. No. 112, in the Main Drive, planted in 1917, was formerly the best specimen at Westonbirt, but has since been blown over, and was cut back after being replanted. Another tree (No. 256) on the margin of Down Cover, planted in 1920, is now 43 ft. high by 1 ft. 1 in. in girth. Both trees are remarkable for their fine handsome foliage and rapid growth. A young tree was planted in 'Texas' in 1922 (No. 1541).

PARK. Young trees planted in the meadow opposite Pickard's Lodge in 1921.

Other young trees elsewhere.

This poplar was raised from seed produced in 1912 by fertilizing a tree of *Populus angulata* at Kew with pollen of the Pacific Coast (U.S.) balsam poplar (*P. trichocarpa*). Four seedlings were raised.

POPULUS ITALICA Moench. Lombardy Poplar. Northern Italy.

Loudon, iii. 1660 (1838) (as *P. fastigiata*); Elwes and Henry, vii. 1798 (1913) (as *P. nigra* var. *italica*); Bean, ii. 217 (1914).

PARK. A tree at the Back Lodges. Several trees in meadow beyond Pickard's Lodge, on each side of the Shipton Road.

SILKWOOD. A group at the top of the Waste.

This well-known tree does not thrive at Westonbirt. After the first twenty years it shows a tendency to become unhealthy, often losing its lower branches.

Probably introduced in 1758.

POPULUS LASIOCARPA Oliver. Central China.

Elwes and Henry, vii. 1846 (1913); Bean, ii. 215 (1914); Bot. Mag., t. 8625 (1915); Pl. Wils., ii. 17 (1916).

ARBORETUM. A fine example of this poplar growing in the Specimen Avenue (No. 204), planted about 1914, was 18 ft. high in 1920. In 1923 it had reached a height of 27 ft. by 1 ft. in girth. In 1926 we made it 32 ft. by 1 ft. 4 in. Two other young trees are on the Straight Drive beyond Wigmore Bottom. Other trees at Hornbeam Corner and Victory Glade (No. 325).

This poplar was discovered in the mountains of Central China by Professor A. Henry. Its large handsome foliage makes it a very desirable tree for gardens.

Introduced by Wilson in 1904.

POPULUS ROBUSTA Schneider. ? Hybrid origin.

Elwes and Henry, vii. 1829 (1913); Bean, ii. 211 (1914).

ARBORETUM. Young trees planted in Wigmore Bottom and elsewhere.

SILKWOOD. Three young trees planted at the top of the Waste are making vigorous growth.

Introduced since 1895.

POPULUS SEROTINA Hartig. Black Italian Poplar. ? Hybrid origin. (*P. monilifera* × *nigra*.)

Loudon, iii. 1657 (1838) (in part); Elwes and Henry, vii. 1816 (1913); Bean, ii. 217 (1914).

Silkwood. A specimen (No. 734) at the bottom of the wood, near the Skillings Gate, measuring 97 ft. by 6 ft. 7 in.

A tree in the Old Nursery is 60 ft. high, and growing rapidly.

Var. *aurea* Henry.

Pleasure Grounds. No. 1292, near the village end.

Two good specimens in the Garden Plantation.

The black Italian poplar, which is the commonest species in cultivation, was introduced about 1754; it has been much confused with the black poplar (*Populus nigra*), a totally distinct tree found wild in Eastern England and elsewhere.

POPULUS SIMONI Carrière. North China.

Elwes and Henry, vii. 1839 (1913); Bean, ii. 218 (1914); Pl. Wils., ii. 21 (1916).

Orchid Nursery. Small plant.

POPULUS SZECHUANICA Schneider. Western China.

Pl. Wils., ii. 20 (1910).

Arboretum. Margin of Down Cover (No. 258), a young tree planted in 1918. No. 315, in Loop Walk, a young plant put out about 1920, was 22 ft. high in 1926. Young trees in 'Texas', Victory Glade, and elsewhere.

Introduced about 1918.

POPULUS TRICHOCARPA Hooker. Western Balsam Poplar, Black Cottonwood. Western North America.

Sargent, Silva, ix. 175, t. 493 (1876); Elwes and Henry, vii. 1836 (1913); Bean, ii. 221 (1914).

Park. Young trees planted with other poplars in the meadow opposite Pickard's Lodge in March, 1921.

Numerous young plants received from Dawyck in Arboretum and woods.

This is the finest of the balsam poplars, attaining a height of 200 ft.

on the Pacific Coast. It grows rapidly in cultivation, and is one of the best of the genus for ornamental planting on account of its beautiful pale green foliage being strongly scented. If planted in suitable situations it can be used for pit-props in ten years or less.

Introduced about 1890.

POPULUS YUNNANENSIS Dode. Western China.

Pl. Wils., ii. 34 (1916).

ARBORETUM. A young tree, planted about 1920 at the end of Loop Walk, is making vigorous growth, and is now (1926) 35 ft. high.

PRUMNOPITYS ELEGANS Philippi. Plum-fruited Yew. (Family TAXACEAE.) Andes of South Chile.

Clinton-Baker, iii. 83 (1913); Dallimore and Jackson, 60 (1923).

ARBORETUM. No. 939, Clay Island, a specimen 15 ft. high. Another specimen (No. 1004), in Loop Walk, is a well-furnished tree of 20 ft. The fruits are sparingly produced at rare intervals.

PLEASURE GROUNDS. Shrubbery at New Ground (No. 1186).

Introduced in 1860 by Messrs. Veitch's collector, Robert Pearce.

PRUNUS AVIUM Linnaeus. Wild Cherry, Gean. (Family ROSACEAE.) Europe (including southern England), Asia Minor, Caucasus.

Loudon, ii. 693 (1838), as *Cerasus silvestris*; Elwes and Henry, vi. 1535 (1912); Bean, ii. 229 (1914).

Two unusually fine specimens in Didmarton Grove, at the top of Silkwood, are 60 ft. to 70 ft. high, one 10 ft. 6 in. and the other 9 ft. 4 in. in girth.

The gean occurs frequently throughout the plantations and woods as a wild tree.

Var. *flore pleno* Hort.

SILKWOOD. In the centre circle of the Broad Drive there is an unusually fine specimen of this variety, measuring 55 ft. by 3 ft. 5 in.

Numerous small specimens have also been planted in the Arboretum and elsewhere.

One of the most beautiful of all flowering trees.

PRUNUS CERASIFERA Ehrhart. Cherry Plum, Myrobolan. ? Caucasus.

Bot. Mag., t. 5934 (1871); Bean, ii. 231 (1914).

Var. *atropurpurea* Dippel. (*P. Pissardi* Carrière.)

Common at Westonbirt, where it has attained a height of nearly 30 ft. First noted in Persia by Mr. Pissard, who was gardener to the Shah, and introduced about forty years ago. It is a particularly attractive tree in the spring, when the delicate rose-coloured flowers are seen with the expanding ruby-red foliage.

A form with intensely deep purple-black foliage, known as the Hazel Dean variety, is in Rattray's Nursery.

Var. *Blireana* Bean.

Many plants of this beautiful variety are established in the Arboretum, Pleasure Grounds, and Silkwood.

Var. *Moseri* Bean.

Generally planted in the Arboretum and Silkwood.

PRUNUS FRUTICOSA Pallas. Ground Cherry. Europe, Siberia.

Bean, ii. 236 (1914).

ARBORETUM. No. 340, in the Down Cover, an old grafted plant producing a mass of weeping branches, which are very effective when flowering in May.

Introduced more than three centuries ago.

PRUNUS LAUROCERASUS Linnaeus. Cherry Laurel. Eastern Europe, Asia Minor.

Loudon, ii. 716 (1838) (as *Cerasus Laurocerasus*); Elwes and Henry, vi. 1551 (1912); Bean, ii. 240 (1914).

Var. *magnoliaefolia* Bean.

Two unusually fine laurels belonging to this variety are growing in the Down Cover (No. 1024), the tallest being 35 ft. high and 3 ft. 9 in. in girth. The two plants have a spread of about 57 ft. and form a miniature shrubbery. The fruit is freely produced and makes a very

choice preserve, contrary to the general belief that the fruit as well as the foliage is poisonous.

In the Down Cover laurels were originally planted on a large scale, and old plants which have been allowed to grow unchecked have in some cases reached a height of 50 ft.

According to Aiton, the cherry laurel was introduced in 1629.

PRUNUS LUSITANICA Linnaeus. Portugal Laurel. Spain, Portugal, the Azores, Canary and Madeira Islands.

Loudon, ii. 714 (1838); Elwes and Henry, vi. 1553 (1912); Bean, ii. 241 (1914).

Common at Westonbirt.

Var. *myrtifolia* Nicholson.

This small-leaved variety of the Portugal laurel has been successfully used as a hedge in the Old Nursery.

The Portugal laurel was introduced, according to Aiton, in 1648.

PRUNUS PADUS Linnaeus. Bird Cherry. Europe, Temperate Asia.

Loudon, ii. 693 (1838); Elwes and Henry, vi. 1535 (1912); Bean, ii. 246 (1914).

SILKWOOD. Three trees, Nos. 523, 611 a, and 653, in the Willesley Drive, the tallest measuring 42 ft. by 2 ft.

A very beautiful tree when in flower. It is apparently native in some English counties and in Scotland.

PRUNUS PERSICA Stokes. Peach. Origin doubtful.

Bean, i. 247 (1914).

Var. *Clara Meyer.*

ARBORETUM. Middle Ride and elsewhere.

PRUNUS PILOSIUSCULA Koehne. West China.

Pl. Wils. i. 202 (1911).

Kitchen Garden Nursery. Young plants.

PRUNUS SARGENTI Rehder. Sargent's Cherry. 'Yama-sakura.' Japan.

Bot. Mag., t. 8411 (1811); Bean, ii. 250 (1914); Wilson, Cherries of Japan, 35 (1916) (as *P. serrulata* var. *sachalinensis*).

Many plants[1] distributed throughout the Arboretum and Silkwood.

According to Wilson this is the handsomest of the wild cherries of Eastern Asia. It is commonly planted in central Japan and is frequent in the north as a wild tree. He states that it is the parent of several of the finest double-flowered Japanese cherries.

At Westonbirt it is very attractive when in flower, and also in the autumn when the foliage turns.

Introduced by Sargent in 1893.

PRUNUS SEROTINA Ehrhart. Rum Cherry. North America from Nova Scotia to Eastern Texas.

Loudon, ii. 712 (1838) (as *Cerasus serotina*); Sargent, Silva, iv. 45, t. 159 (1902); Elwes and Henry, vi. 1546 (1910); Bean, ii. 251 (1914).

The rum cherry grows well at Westonbirt, and in Silkwood there are a number of old trees formerly called *Cerasus virginiana*. The latter is a North American shrubby species, with which *P. serotina* has been much confused.

Arboretum. No. 201, in the Main Drive, is a tree 41 ft. by 2 ft. 10 in.

Silkwood. No. 394, in the Centre Ride, is 40 ft. by 3 ft. No. 448, in the Broad Drive, is 48 ft. by 2 ft. 8 in. No. 587, in the Willesley Drive, is a tree 45 ft. by 2 ft. 8 in. No. 651, also in the Willesley Drive, is 51 ft. by 3 ft. 2 in., and the largest specimen we have measured.

Introduced, according to Loudon, in 1629.

PRUNUS SERRULATA Lindley. Japanese Cherry. Japan, Corea, China.

Loudon, ii. 701 (1838) (as *Cerasus serrulata*); Bot. Mag., t. 8012 (1905) (as *P. pseudocerasus*); Bean, ii. 252 (1914); Wilson, Cherries of Japan, 36 (1916).

Single and double-flowered forms of this variable cherry have been largely planted in the Arboretum and Silkwood. An old specimen in the Pleasure Grounds, near the lake, planted about 1875, is now about 25 ft. high, and another on New Ground is 15 ft.

[1] These were received from Dawyck, where they were grown from seed sent by Sargent in 1911 to Mr. F. R. S. Balfour, who raised 370 plants.

The most noteworthy varieties are:

Var. *pendula rosea* Hort. Kew.

A weeping cherry by the lake, with rather small double pink flowers, has been so named at Kew.

Var. *flore luteo pleno* Hort.

Bean, ii. 252 (1914); Wilson, Cherries of Japan, 56 (1916) as *P. Lannesiana* forma *grandiflora*.

Arboretum. Middle Ride and elsewhere. A very striking variety, with greenish-yellow flowers.

Var. *sekiyama* (Wilson). (Var. *hisakura* Hort.)

Wilson, Cherries of Japan, 41 (1916) as *P. serrulata* var. *sachalinensis* forma *sekiyama*.

Arboretum and Pleasure Grounds. Planted in many places. A very handsome specimen in the West Lodge Clump is 25 ft. high. Several old trees in the Old Nursery. They have been planted about thirty-five years, the largest being 25 ft. high and 2 ft. in girth. In April or early May they are wreathed with masses of large double rose-coloured flowers, which, contrasting with the branching young foliage, produce a lovely effect. These are undoubtedly the same as the cherry now sold by the nurserymen as *hisakura*, a Japanese name which has been applied to at least three different varieties of *Prunus serrulata*. The var. *sekiyama* is a late bloomer, and has a tendency to a fastigiate habit. In this respect it differs from var. *Veitchiana*, which has a more spreading habit, and opens its flowers still later. We agree with Wilson that it is the handsomest of all the Japanese cherries.

Var. *Veitchiana* Bean.

Bean, ii. 252 (1914); Wilson, Cherries of Japan, 39 (1916) as *P. serrulata* var. *sachalinensis* forma *fugenzo*.

Arboretum and Pleasure Grounds in many places.

One of the best known and most beautiful of all the imported Japanese cherries, being generally grown under the name of 'James H. Veitch', who found it in a nursery at Tokyo in 1861.

Two Japanese cherries at Westonbirt have been named *P. Lannesiana* Wilson, but this appears to be merely a form of *P. serrulata* Lindley.

The cherry known as *Hoyakawabeni*, with double flowers of a soft pink, has recently been planted in the Arboretum and Silkwood. It appears to be one of the numerous forms of *P. serrulata*.

PRUNUS SIEBOLDI Wittmack. Japan (cultivated).

Pl. Wils., i. 580 (1913); Bean, ii. 249 (1914); Wilson, Cherries of Japan, 57 (1916).

Silkwood. An old tree (No. 610) in Willesley Drive is only 18 ft. high by 1 ft. 8 in. in girth after 50 years' growth. It is believed to be one of the first Japanese cherries to be planted in England.

Prunus Sieboldi is a double-flowered cherry allied to *P. pseudocerasus* Lindley, and long cultivated under the name of *Cerasus Watereri*.

PRUNUS SPINOSA Linnaeus. Sloe, Blackthorn. Europe (including Britain), North Asia.

Bean, ii. 253 (1914).

Var. *purpurea* André.

Revue Horticole, 1905, 481.

Arboretum. Wigmore Bottom and elsewhere.

PRUNUS SUBHIRTELLA Miquel. Japan (cultivated).

Bot. Mag., t. 7508 (1896); Bean, ii. 254 (1914); Wilson, Cherries of Japan, 5 (1916).

Var. *autumnalis* Makino.

Bean, iii. 1243 (1914) (as *P. microlepis*); Wilson, Cherries of Japan, 5 (1916).

Arboretum. Entrance to Middle Ride; young tree added 1924.

This attractive cherry is remarkable from the fact that it flowers in late autumn as well as again in spring, which gives it a special value in gardens. Wilson states that in Japan the flowers in autumn are smaller than those of spring; also that when blooming well in early April the flowers produced on the same bushes in October are sparse.

PRUNUS TRILOBA Lindley. China.

Bot. Mag., t. 8061 (1906); Bean, ii. 256 (1914).

Var. *flore pleno* Hort.

Arboretum. Victory Glade.

The double-flowered form was introduced in 1855.

DOUGLAS FIR

In Arboretum

PSEUDOTSUGA DOUGLASII Carrière. Douglas Fir. (Family Pinaceae.) Western North America.

Loudon, iv. 2319 (1838) (as *Abies Douglasii*); Sargent, Silva, xii. 87, t. 607 (1898) (as *Pseudotsuga mucronata*); Elwes and Henry, iv. 814 (1909); Clinton-Baker, i. 58 (1914); Dallimore and Jackson, 476 (1923).

The Douglas fir attains massive dimensions at Westonbirt, the most interesting trees being:

Arboretum. A group of three (No. 974) in the Main Drive contains what is probably the tallest tree of any kind in the Arboretum. This was measured twice from different points, but we could not make it less than 115 ft. high by 11 ft. 9 in. in girth. Two other fine specimens, also in the Main Drive, are each about 100 ft. high by 10 ft. 2 in. and 9 ft. respectively in girth. No. 964, between the Pool and the Down Cover, is a tree 96 ft. high, with a massive trunk 12 ft. 10 in. in girth. A tall tree (No. 1002) in Loop Walk (Plate 47) was entirely stripped of its branches by snow some years ago; it has recovered, and is now completely furnished with branches again. There are other fine trees in Specimen Avenue and Loop Walk.

Silkwood. In Sand Earth Corner a large number of Douglas firs planted by the owner between 1893 and 1895 are now from 60 to 70 ft. high.

The Douglas fir, which is one of the most important timber-trees of the world, was discovered by Menzies in 1793 and introduced by Douglas in 1827.

PTELEA TRIFOLIATA Linnaeus. Hop Tree. (Family Rutaceae.) South Canada and Eastern United States.

Bean, ii. 260 (1914).

Var. *aurea* Hort.

Pleasure Grounds. No. 1429, near the Sunken Garden; also in the Old Nursery.

Introduced in 1704.

PTEROCARYA CAUCASICA C. A. Meyer. (Family JUGLANDACEAE.) Persia, the Caucasus.

Loudon, iii. 1452 (1838); Elwes and Henry, ii. 438 (1907); Bean, ii. 261 (1914).

SILKWOOD. A small tree (No. 577) in the Willesley Drive.

Introduced into European cultivation in 1782.

PTEROCARYA REHDERIANA Schneider. Hybrid origin (*P. caucasica* × *P. stenoptera.*)

Elwes and Henry, ii. 439 (1907); Bean, ii. 263 (1914).

ARBORETUM. No. 241 in the Main Drive, near the Down Pool.

A hybrid raised in the Arnold Arboretum in 1879, and introduced to Kew in 1908.

PYRACANTHA ANGUSTIFOLIA Schneider. (Family ROSACEAE.) Western China.

Bot. Mag., t. 8345 (1910); Bean, ii. 267 (1914).

PLEASURE GROUNDS. Wall of gardener's office. A fine plant, which is generally loaded with yellow berries all the winter.

Young plants from the Forrest Collection (1917 seed), received from Woburn in 1922.

Introduced to Kew in 1899.

PYRACANTHA COCCINEA Roemer. Fire Thorn. 'Buisson ardent.' Southern Europe.

Bean, ii. 268 (1914).

One of the best known of evergreens, and in most autumns the most attractive, when loaded with its masses of coral-red fruits.

Introduced in 1629.

PYRACANTHA GIBBSI Jackson. Western China.

Gard. Chron., Dec. 30, 1916, p. 309; Bot. Mag., t. 9099 flor. (1926) (as *P. atalantioides* Stapf).

ARBORETUM. Plants in Victory Glade.

PYRACANTHA ROGERSIANA Chittenden. Western China.

Gard. Chron., Dec. 30, 1916, p. 309 (as *P. crenulata* var. *Rogersiana* Jackson); Gard. Chron., Dec. 24, 1921, p. 325.

Young plant received from Stanage Park in 1926.

PYRACANTHA YUNNANENSIS Chittenden. Western China.

Gard. Chron., Dec. 24, 1921, p. 235; March 31, 1919 (as *P. Gibbsi* var. *yunnanensis*); Bot. Mag., t. 9099 (1926).

ARBORETUM. Pool Avenue.

PYRUS AMERICANA De Candolle. (Family ROSACEAE.) American Mountain Ash.

Loudon, ii. 920 (1838); Elwes and Henry, vi. 1574 (1912); Bean, ii. 272 (1914).

SILKWOOD. No. 720, in the Willesley Drive, a tree originally labelled *Sorbus montana*.

Old Nursery. Two young trees labelled var. *anceps*. This variety we are unable to trace.

The American mountain ash was introduced in 1872, but no large trees are known in this country.

PYRUS ARBUTIFOLIA Linnaeus. Eastern North America.

Bean, ii. 274 (1914); Bot. Mag., t. 9052 (1925) (as *Aronia melanocarpa* Ell.).

ARBORETUM. Young plants in the Broad Avenue planted about 1916.

Cultivated in England for more than two hundred years.

PYRUS ARIA Ehrhart. Whitebeam. Europe, &c. (including the British Isles).

Loudon, ii. 910 (1838); Elwes and Henry, i. 166 (1906); Bean, ii. 274 (1914).

ARBORETUM and SILKWOOD.

Var. *majestica* Prain.

Bot. Mag., t. 8184 (1906).

This, the finest of all the varieties of the whitebeam on account of its large foliage and fruits, is represented at Westonbirt by at least two good trees, one in the Arboretum (No. 270, in the Main Drive) being 45 to 50 ft. high by 2 ft. 5 in. Another in Silkwood, in the Willesley Drive, measures 24 ft. by 2 ft. 8 in.

PYRUS AUCUPARIA Gaertner. Mountain Ash. Rowan. Europe (including Britain).

Loudon, ii. 916 (1838); Elwes and Henry, vi. 1576 (1912); Bean, ii. 276 (1914).

ARBORETUM and SILKWOOD.

Var. *moravica* Zengerling. (Var. *dulcis* Krazl.)

Three plants (No. 298) in Pool Avenue. They belong to the form known as 'laciniata', which has deeply cut leaves. A good specimen in the Old Nursery, 1924.

Var. *pendula* Kirchner.

PLEASURE GROUNDS. No. 1290, near the village end.

Var. *fructu luteo* Hort. (Var. *Fifeana* Dippel.)

Rattray's Nursery. Several plants.

Var. *asplenifolia* Koch.

Rattray's Nursery. Several plants.

PYRUS BACCATA Linnaeus. Siberian Crab. Eastern Siberia, Manchuria, Northern China, Himalayas.

Bot. Mag., t. 6112 (1874); Bean, ii. 278 (1914).

ARBORETUM and SILKWOOD. Several groups.

Introduced in 1784.

PYRUS BETULIFOLIA Bunge. Northern China.

Bean, i. 279 (1914).

Middle Ride, planted 1923.

Introduced in 1882.

PYRUS ELEYI Bean. (*P. Niedwetzkyana* (seed-bearing) × *spectabilis*.)

Gard. Chron., Aug. 14, 1920, p. 85, t. 37, and Oct. 7, 1922, p. 214, t. 87.

ARBORETUM. Young plants added 1923.

A very beautiful crab, first raised in the garden of Mr. Charles Eley at East Bergholt, Suffolk. The bright-reddish purple hue of the young foliage is very attractive.

PYRUS (*SORBUS*) *ESSERTEAUIANA* Koehne. Western Sze-ch'uan, China.

Pl. Wils., i. 459 (1913).

ARBORETUM. Three vigorous young trees, the tallest about 20 ft. high, in Victory Glade. They were planted about 1916, and bore handsome orange-red fruits in 1923.

PYRUS FOLGNERI Léveque. (*Micromeles Folgneri* Schneider.) China.

Bean, ii. 283 (1914).

ARBORETUM. Wigmore Clump (No. 40); Clay Island (No. 237). The foliage turns a very beautiful plum colour in the autumn, which contrasts strikingly with the white under-surface of the leaves.

Introduced by Wilson in 1901.

PYRUS FLORIBUNDA Nicholson. Japanese Crab. (? *P. baccata* × *Toringo*.)

Bean, ii. 282 (1914).

One of the most striking and beautiful of the spring-flowering trees at Westonbirt, where there are many well-grown specimens in the Arboretum, Pleasure Grounds, and elsewhere. No. 1370, on New Ground, has a stem 2 ft. 2 in. in girth.

Var. *atrosanguinea* Hort.

ARBORETUM and PLEASURE GROUNDS. Many specimens.

PYRUS (*SORBUS*) *HARROWIANUS* Balf. fil. et W. W. Smith. Western China.

Notes, Roy. Bot. Gard. Edinb., x. 61 (1917).

Young plant in the Kitchen Garden Nursery, received from Edinburgh.

A very remarkable plant, conspicuous by its large stout, leathery leaves, which often exceed 8 inches in length, and by the small number of leaflets. It is clearly allied to *Pyrus* (*Sorbus*) *Sargentiana*, but this differs in its smaller thinner leaflets, which have a long acuminate apex and a more woolly under surface.

Named after R. L. Harrow, head-gardener of the Royal Botanic Garden, Edinburgh.

PYRUS HOSTII Hort. Hybrid origin. (*P. Chamaemespilus* × ? *intermedia.*) Alps of Austria.

Bean, ii. 280 (1914); The Garden, 1881, xx. 376.

Silkwood. No. 626, in the Willesley Drive. Garden Cover.

PYRUS INTERMEDIA Ehrhart. (*P. scandica* Aschers.) Swedish Whitebeam. North and Central Europe.

Loudon, ii. 912 (1838); Elwes and Henry, i. 159 (1906); Bean, ii. 285 (1914).

A tree in the Old Nursery was 55 ft. high by 5 ft. 4 in. in girth in 1920. Another tree, in a plantation by the gas-works, measures 45 ft. by 5 ft. 2 in.

Park. A small specimen in the Garden Plantation.

Silkwood. No. 616, in the Willesley Drive.

PYRUS IOENSIS Bailey. Crab. North America.

Bot. Mag., t. 8488 (1913); Elwes and Henry, vi. 1568; Bean, ii. 285 (1914).

Var. *flore pleno.* The Bechtel Crab.

Arboretum. Group of four trees in Victory Glade.

Silkwood. A group in Willesley Drive.

Bechtel's crab is a very attractive tree on account of its large pink double flowers, with a violet-like fragrance, produced in early June. It is, however, a difficult subject in this country, and up to now has proved a disappointing tree at Westonbirt.

PYRUS MALUS Linnaeus. Crab Apple. Europe, North-west Asia.

Loudon, ii. 891 (1838); Elwes and Henry, vi. 1570 (1912).

Var. *Aldenhamensis* Gibbs.

Gard. Chron., May 20, 1916, p. 275.

Var. *Niedwetzkyana* Ascherson and Graebner.

Bot. Mag., t. 7975 (1904); Bean, ii. 288 (1914).

ARBORETUM. Two trees (No. 195) in the Main Drive. One fine plant in Elm Avenue. Inclined to be of straggly growth and requires careful pruning.

SILKWOOD. No. 377, near the West Gate, and many other plants.

GARDEN. Several plants.

One of the handsomest of the crabs. The young shoots, foliage, and flowers are suffused with red.

Dartmouth Crab.

ARBORETUM. No. 62, in the Straight Drive, also fine plant in Garden.

John Downie's Crab.

ARBORETUM. No. 63, in the Straight Drive.

SILKWOOD. No. 383, near the West Gate. Largely planted in Arboretum and Silkwood.

PYRUS MUNDA. Western China.

Pl. Wils. i. 469 (1913) (as *Sorbus munda* Koehne).

f. *subarachnoidea* Koehne.

Gard. Chron., Sept. 25, 1920, p. 153, Fig. 66.

ARBORETUM. Young plants in the Down Cover.

One of the most striking of the mountain ash section on account of its pearly white fruits.

PYRUS PINNATIFIDA Ehrhart. Bastard Service Tree. Hybrid origin. (*P. Aucuparia* × *intermedia.*)

Loudon, ii. 915 (1838); Elwes and Henry, i. 163 (1906); Bean, ii. 289 (1914).

ARBORETUM. No. 85, in the Straight Drive.

SILKWOOD. No. 643, in the Willesley Drive. No. 711, also in the Willesley Drive, is a tree 30 ft. high by 3 ft. in girth.

PYRUS PURPUREA Hort. (*P. floribunda atrosanguinea* × *Malus* var. *Niedwetzkyana.*)

Has been largely planted at Westonbirt.

A very beautiful hybrid crab and a great improvement on its parent *Niedwetzkyana* in habit and constitution.

PYRUS RINGO Wenzig. (? *P. Malus* × *spectabilis.*)

Bot. Mag., t. 8265 (1909); Bean, ii. 292 (1914).

Silkwood. Willesley Drive, recently planted.

Introduced from Japan about 1850.

PYRUS SARGENTI Bean. Japan.

Sargent, Trees and Shrubs, i. t. 36 (1902–5); Bean, ii. 293 (1914).

Arboretum. Four plants in Middle Ride averaging about 6 ft. high. They were planted in 1926.

Introduced by Sargent in 1908.

PYRUS (*SORBUS*) *SARGENTIANA* Koehne. Western China.

Pl. Wils. i. 461 (1913).

Orchid Nursery. Young plant raised from seed. A very striking and beautiful plant.

PYRUS SPECTABILIS Aiton. Northern China, Japan.

Bot. Mag., 267 (1794); Bean, ii. 296 (1914).

Arboretum. Three good specimens.

Silkwood. No. 700, in the Willesley Drive. Other specimens elsewhere.

Cultivated in England as long ago as 1780.

PYRUS TORMINALIS Linnaeus. Wild Service. Europe.

Loudon, ii. 913 (1838); Elwes and Henry, i. 143 (1906); Bean, ii. 298 (1914).

Silkwood. A small tree (No. 441, in the centre circle of the Broad Drive) is making very slow growth.

Old Nursery, near Rockery.

PYRUS VESTITA Wallich. Himalayan Whitebeam.

Bot. Mag., t. 8259 (1909) (as *Sorbus cuspidata*); Elwes and Henry, i. 145 (1907); Bean, ii. 209 (1914).

ARBORETUM. No. 271, in the Main Drive, measuring about 40 ft. by 2 ft. 8 in. It is grafted at 4 ft. from the ground.

SILKWOOD. No. 470, in the Waste. No. 578, in the Willesley Drive.

PLEASURE GROUNDS. No. 1365, in shrubbery near the Sunken Fence.

Introduced in 1820.

PYRUS VILMORINI Ascherson. Western China.

Bot. Mag., t. 8241 (1909); Bean, ii. 299 (1914).

ARBORETUM. No. 197, in the Main Drive.

A very beautiful and distinct species belonging to the mountain ash group. The fruit, which is pink in its early stages, becomes whitish when mature.

Introduced to Kew in 1905. Originally raised in France.

PYRUS (*SORBUS*) *WILSONIANA* Schneider. Western Hupeh, China.

Pl. Wils. i. 458 (1913).

Three plants received from Woburn in 1922 and 1924. The foliage of one planted in Victory Glade turned a beautiful carmine colour in October 1924.

PYRUS YUNNANENSIS Franchet. Western China.

Pl. Wils. ii. 287 (1915); Bot. Mag. t. 8629 (1915).

ARBORETUM. Young tree in the Down Cover.

QUERCUS ACUTA Thunberg. (Family FAGACEAE.) Japan.

Elwes and Henry, v. 1330 (1910); Bean, ii. 301 (1914).

ARBORETUM. Small plants, Nos. 97 and 188 in the Main Drive, No. 327 in Loop Walk.

PLEASURE GROUNDS. No. 1157, a well-grown specimen.

This oak was introduced by Maries in 1877.

QUERCUS AEGILOPS Linnaeus. Valonia Oak. Greece, Asia Minor.

Loudon, iii. 1861 (1838); Elwes and Henry, v. 1268 (1910); Bean, ii. 302 (1914).

Silkwood. Two trees, Nos. 477 and 490, in the Oak collection in the Broad Drive, one a well-grown specimen measuring 30 ft. by 2 ft. 2 in.

The acorn cups of this species, which appears to have been introduced in 1731, were formerly much used for tanning.

QUERCUS ALBA Linnaeus. White Oak. North America.

Loudon, iii. 1864 (1838); Sargent, Silva, viii. 16, tt. 356, 357, 358 (1895); Elwes and Henry, v. 1301 (1910); Bean, ii. 302 (1914).

Silkwood. Nos. 421, 421 *a*, and 423 in the Oak collection, and No. 704 in the Willesley Drive, appear to belong to this rare species, which, though introduced as long ago as 1724, and repeatedly tried in this country, has never thriven. The Westonbirt trees were planted about 1877, but the largest is only 30 ft. high by 1 ft. 9 in. in girth, and is probably the tallest in the country. The leaves of this species are very variable in degree of lobing. In autumn they turn a deep rich vinous red.

In the American forests *Quercus alba* is a very fine tree, attaining 150 ft. in height and 20 ft. in girth. It yields an important timber.

QUERCUS ALIENA Blume. China, Corea, Japan.

Pl. Wils. iii. 214 (1916).

Var. *acuteserrata* Maximowicz.

Pl. Wils. iii. 215 (1916).

Arboretum. Young plants raised from acorns (Nos. 517 and 529) collected by Wilson in China at Hsing-shan Hsien woods, 3,000 to 6,000 ft. altitude, 1907, have been planted in the Straight Drive beyond Wigmore Bottom.

QUERCUS BICOLOR Willdenow. Swamp White Oak. Canada, North and Central United States.

Loudon, iii. 1876 (1838) (as *Q. Prinus* var. *tomentosa*); Sargent, Silva, viii. 63, tt. 380, 381 (1895) (as *Q. platanoides*); Elwes and Henry, v. 1307 (1914); Bean, ii. 303 (1914).

ARBORETUM. No. 93, in the Main Drive, is a tree 42 ft. 6 in. by 2 ft. 5 in.

SILKWOOD. Nos. 407 and 424, stunted specimens in the Oak collection in the Broad Drive. Nos. 601 and 647, in the Willesley Drive.

Introduced probably about 1800.

QUERCUS CERRIS Linnaeus. Turkey Oak. South-eastern Europe, Asia Minor.

Loudon, iii. 1846 (1838); Elwes and Henry, v. 1254 (1910); Bean, ii. 305 (1914).

Widely planted at Westonbirt.

Introduced in 1735.

QUERCUS COCCINEA Muenchhausen. Scarlet Oak. Eastern North America.

Loudon, iii. 1879 (1838); Sargent, Silva, viii. 133, tt. 412, 413 (1895); Bean, ii. 307 (1914).

Young trees of the var. *splendens*, commonly known as the Knaphill variety, which is the best form of the scarlet oak, have been planted in many spots at Westonbirt, where in autumn their brilliant colour effects are very striking.

ARBORETUM. A fine symmetrical specimen, 50 ft. high by 2 ft. 10 in. in girth, opposite Wigmore Bottom. Several trees in Pool Avenue.

PLEASURE GROUNDS. No. 556, a tree west of the house, is 44 ft. high.

SILKWOOD. A small tree on the corner of Willesley Drive and the Broad Drive colours particularly well in the autumn.

Four young trees planted on the Down in 1926.

The species is said to have been growing in England in 1691.

QUERCUS CONFERTA Kitaibel. Hungarian Oak. South-eastern Europe.

Elwes and Henry, v. 1316 (1910); Bean, ii. 307 (1914).

ARBORETUM. No. 105, in the Main Drive, a tree 66 ft. by 5 ft. 10 in.

PARK. A well-shaped tree near the Main Drive (No. 1443), measuring 50 ft. by 4 ft. 6 in.

There are smaller trees in Silkwood and elsewhere.

The large deeply incised leaves make this one of the most ornamental of oaks.

Introduced about 1837.

QUERCUS CUSPIDATA Thunberg. Japan, Formosa, Corea.

Elwes and Henry, v. 1332 (1910); Bean, ii. 308 (1914).

ARBORETUM. A small specimen (No. 99) of shrubby habit in the Main Drive. It was recently damaged by a falling elm.

Introduced in 1879 by Maries.

QUERCUS FALCATA Michaux. Spanish Oak. United States.

Loudon, iii. 1882 (1838); Sargent, Silva, viii. 147, tt. 420, 421 (1895) (as *Q. digitata*); Elwes and Henry, v. 1237 (1910) (as *Q. cuneata*); Bean, ii. 308 (1914) (as *Q. cuneata*).

SILKWOOD. No. 401, in the Broad Drive, is a tree 24 ft. by 1 ft. 2 in.

This oak, which is very rarely seen in collections, was introduced in 1763 by Mr. Murdoch Murchison and reintroduced in 1800. The leaves are variable in shape. In the Westonbirt tree they are three- to five-lobed.

QUERCUS GLANDULIFERA Blume. China, Corea, Japan.

Elwes and Henry, v. 1327 (1910); Bean, ii. 310 (1914); Pl. Wils. iii. 212 (1916).

ARBORETUM. Young plants raised from acorns (Nos. 519 and 521) collected by Wilson in China at Changyang Hsien woodlands, 1,000 ft. to 5,000 ft. altitude, and Patung Hsein woods, 1,800 ft. to 4,500 ft. altitude, have been planted out in the Straight Drive.

Introduced in 1893.

QUERCUS ILEX Linnaeus. Holm Oak. Mediterranean region.

Loudon, iii. 1899 (1838); Elwes and Henry, v. 1281 (1910); Bean, ii. 311 (1914).

Common at Westonbirt, where, however, it has attained no great size.

Var. *Fordii* Loudon.

ARBORETUM. No. 186, in the Main Drive.
Cultivated in England since the sixteenth century.

QUERCUS ILICIFOLIA Wangenheim. Bear Oak. United States.

Loudon, iii. 1893 (1838); Sargent, Silva, viii. 155, t. 424 (1895) (as *Q. nana*).

SILKWOOD. Two trees, Nos. 404 and 414, in the Oak collection in the Broad Drive, the former measuring 25 ft. by 1 ft.
Introduced in 1800.

QUERCUS IMBRICARIA Michaux. Shingle Oak. United States.

Loudon, iii. 1898 (1838); Sargent, Silva, viii. 175, t. 432 (1895); Elwes and Henry, v. 1231 (1910); Bean, ii. 313 (1914).

There is a well-grown healthy specimen of this rare tree among a group of oaks on the Downs (No. 357). Its dimensions are 45 ft. by 2 ft. 8 in.
Introduced in 1786 by John Fraser.

QUERCUS KELLOGGI Newberry. Californian Black Oak. Oregon, California.

Sargent, Silva, viii. 141, t. 416 (1895); Elwes and Henry, v. 1241 (1910); Bean, ii. 313 (1914).

SILKWOOD. A small tree in the Willesley Drive (No. 679), cultivated for many years under the name of *Q. sonomensis*. It is one of the trees raised by Lord Ducie, who obtained acorns from San Francisco in 1878, and sent seedlings to Westonbirt in the autumn of 1883.

QUERCUS LANUGINOSA Thuillier. South Europe.

Loudon, iii. 1736 (1838) (as *Q. sessiliflora* var. *pubescens*); Elwes and Henry, ii. 294 (1907); Bean, ii. 314 (1914).

SILKWOOD. Several trees (Nos. 387, 481, 483, 494, and 499) in the Broad Drive. The first named, which has been cultivated under the name of *Q. mongolica*, is 34 ft. high by 1 ft. 10 in. in girth.

QUERCUS LEANA Nuttall. Hybrid origin. South-eastern United States.

Sargent, Silva, viii. 176, t. 434 (1895) (as *Q. imbricaria* × *velutina*); Elwes and Henry, v. 1232 (1910); Bean, ii. 314 (1914).

SILKWOOD. Three trees; one (No. 413) in the Oak collection, cultivated under the name *Q. villosa*, is 36 ft. by 2 ft. 6 in. Another (No. 526), in the Willesley Drive, is 32 ft. by 1 ft. 11 in. No. 566, also in Willesley Drive, is 37 ft. by 1 ft. 11 in.

Date of introduction uncertain.

QUERCUS LOBATA Née. Valley Oak. California.

Sargent, Silva, viii. 23, t. 362 (1895); Elwes and Henry, v. 1306 (1910); Bean, ii. 316 (1914).

Young plant in the Kitchen Garden Nursery.

Introduced to Kew in 1874.

QUERCUS LUCOMBEANA Sweet. Lucombe Oak. Hybrid origin (*Q. Cerris* × *suber*).

Loudon, iii. 1851 (1838) (as *Q. Cerris* var. *Lucombeana*); Elwes and Henry, v. 1259 (1910); Bean, ii. 316 (1914).

Not infrequent at Westonbirt, especially in Silkwood, where there are a number of trees but none of any size.

GARDENS. There is a well-grown shapely tree on the lawn opposite the south front of the house, measuring 57 ft. by 9 ft. 3 in.

PARK. Two trees with compact rounded heads of foliage, near the Main Drive, are conspicuous objects in winter on account of their evergreen foliage.

ARBORETUM. An evergreen or semi-evergreen oak in 'Texas' strongly resembles the Turkey oak, but its persistent leaves indicate that it is a Lucombe seedling. Its dimensions are 62 ft. by 4 ft. 10 in. A smaller tree of a similar character is growing in the Broad Ride of Silkwood (No. 478).

QUERCUS MACRANTHERA Fischer and Meyer. Caucasus, North Persia.

Elwes and Henry, v. 1322 (1910); Bean, ii. 318 (1914).

ARBORETUM. No. 69, in the Main Drive, is 50 ft. high by 3 ft. 2 in.

SILKWOOD. No. 446, near the corner of the Broad Drive and Willesley Drive, is a small tree with very handsome foliage, some of the larger leaves being 7 in. long. No. 502, in the Willesley Drive, is a tree 40 ft. high by 3 ft. 5 in. No. 662, a small tree also in the Willesley Drive.

This distinct and striking oak is said to have been introduced into England about 1895, but the Westonbirt trees must have been planted much earlier, probably in the seventies.

QUERCUS MACROCARPA Michaux. Burr Oak. North America.

Loudon, iii. 1869 (1838); Sargent, Silva, viii. 43, tt. 371, 372, 373 (1895); Elwes and Henry, v. 1304 (1910); Bean, ii. 318 (1914).

SILKWOOD. Two stunted trees, Nos. 411 and 416, in the Oak collection in the Broad Drive, were formerly called *Q. olivaeformis.*

Introduced in 1811, but, like most of the white oaks from eastern North America, has never thriven in this country.

QUERCUS MIRBECKI Durieu. Portugal, North Africa.

Elwes and Henry, v. 1318 (1910); Bean, ii. 319 (1914).

SILKWOOD. No. 485, in the Oak collection in the Broad Drive, is a tree 36 ft. high by 2 ft. 10 in. Another tree close by.

QUERCUS OBTUSATA Humboldt and Bonpland. (*Q. Hartwegi* Benth.) Mexico.

Loudon, iii. 1942 (1838); Elwes and Henry, v. 1312 (1910); Bean, ii. 320 (1914).

SILKWOOD. No. 397, a small tree in the Oak collection in the Broad Drive, long known as *Q. rugosa genuensis.* It was sent out under this name by Smith of Worcester. No. 492, also in the Broad Drive. A third tree, No. 632, in the Willesley Drive, is 30 ft. by 1 ft. 9 in.[1] Seedlings have been raised from one of these trees which produced acorns about 1923.

This is one of the rarest oaks in cultivation.

Introduced in 1839.

[1] All the cultivated trees of *Q. obtusata* we have examined have glabrous leaves, but in dried specimens from native trees preserved at Kew the lower surface of the leaves is more or less covered with stellate hairs.

QUERCUS PALUSTRIS Muenchhausen. Pin Oak. United States.

Loudon, iii. 1887 (1838); Sargent, Silva, viii. 151, tt. 422, 423 (1895); Elwes and Henry, v. 1250 (1910); Bean, ii. 320 (1914).

Arboretum. No. 137, in the Main Drive, a well-shaped tree measuring 51 ft. by 2 ft. 10 in., which colours well in autumn, and for this reason was often used for table decoration at Westonbirt late in November. It was long known as *Quercus Reitenbachii*, which is doubtless merely a nurseryman's name.

Silkwood. Trees in the Broad Drive and Willesley Drive, but none of them are of exceptional size. The foliage often becomes scarlet in the autumn, and is almost as effective as that of *Q. coccinea*.

QUERCUS PEDUNCULATA Ehrhart. Common Oak. Europe.

Loudon, iii. 1731 (1838); Elwes and Henry, ii. 282 (1907); Moss, Journal of Botany, 1910, p. 6 (as *Q. Robur*); Bean, ii. 320 (1914).

Woods and plantations. In the Down Cover are many well-grown oaks, planted by the late Mr. Holford in 1829. Some of these are about 90 ft. high after nearly one hundred years' growth.

A tree in the Park (No. 1431 a), planted on the day of the owner's birth, 2nd June 1860, is now 50 ft. high by 4 ft. 7 in. in girth.

Var. *fastigiata* Spach. Cypress Oak.

Arboretum. No. 333, in the Down Cover.

Silkwood. No. 480, in the Oak collection.

Pleasure Grounds. No. 1277, near the lake, a tree 25 ft. high.

Var. *heterophylla* Loudon.

Silkwood. Two trees (No. 495) in the Oak collection.

Var. *purpurascens* De Candolle.

Silkwood. No. 408, in the Oak collection.

QUERCUS PHELLOS Linnaeus. Willow Oak. Eastern United States.

Loudon, iii. 1894 (1838); Sargent, Silva, viii. 179, t. 435 (1895); Elwes and Henry, v. 1228 (1910); Bean, ii. 322 (1914).

Silkwood. No. 418, in the Oak collection in the Broad Drive, a small tree which has lost its top, but is making a strong fresh leader.

Introduced about 1723.

QUERCUS PONTICA Koch. Armenian Oak. Western Caucasus, Lazistan.

Elwes and Henry, v. 1321 (1910); Bean, ii. 322 (1914).

Young plant in the Kitchen Garden Nursery, received from Aldenham.

A very distinct oak, with handsome, strongly ribbed leaves, introduced into cultivation by Lord Kesteven in 1905.

QUERCUS PRINUS Linnaeus. Chestnut Oak. Eastern North America.

Loudon, iii. 1872 (1838); Sargent, Silva, viii. 51, tt. 375, 376 (1895); Elwes and Henry, v. 1309; Bean, ii. 323 (1914).

SILKWOOD. No. 400, in the Oak collection, is a stunted and broken specimen, much crowded by other trees.

The chestnut oak, although introduced into cultivation about the end of the seventeenth century, is still very uncommon in gardens.

QUERCUS PSEUDOSUBER Santi. (? *Q. Cerris* × *suber*). Italy, Sicily, Calabria.

Elwes and Henry, v. 1263 (1910); Bean, ii. 317 (1914).

ARBORETUM. No. 122, in the Main Drive.

DOWNS. No. 360, in the Oak collection.

SILKWOOD. No. 691, in the Willesley Drive.

The foliage of *Q. Pseudosuber* closely resembles that of some forms of the Lucombe oak, and it is probable that it is a hybrid of the same origin.

QUERCUS RUBRA Linnaeus. Red Oak. Eastern North America.

Loudon, iii. 1877 (1838); Sargent, Silva, viii. 125, tt. 409, 410 (1895); Elwes and Henry, v. 1242 (1912); Bean, ii. 323 (1914).

Frequent at Westonbirt.

PARK. A tree on right-hand side of drive going from the house (No. 1438 a) measures 66 ft. by 8 ft. 5 in. Another (No. 1452), in the Stable Clump, is about 75 ft. high. There are a number of trees in Silkwood, but none of exceptional size.

ARBORETUM. A fine symmetrical tree at the entrance to Down Cover measures 75 ft. by 7 ft. 3 in.

QUERCUS SESSILIFLORA Salisbury. Durmast Oak. Europe (including Britain).

Loudon, iii. 1736 (1838); Elwes and Henry, ii. 291 (1907); Moss, Journal of Botany, 1910, p. 1; Bean, ii. 325 (1914).

Var. *Dalechampii* Koch.

SILKWOOD. No. 498, a small tree in the Broad Drive.

Var. *dschorochensis* Hort.

SILKWOOD. No. 475, in the Broad Drive.

Var. *iberica* Hort.

SILKWOOD. No. 525, in the Willesley Drive.

Var. *mespilifolia* Wallroth. (Var. *Louetti* Hort.)

SILKWOOD. Nos. 488 and 496, in the Broad Drive. No. 692, in the Willesley Drive.

The oak in Silkwood (No. 497) in the Broad Drive, labelled *Q. Thomasii*, appears to us to be a form of *Q. sessiliflora* rather than a variety *Q. pedunculata*, as suggested by De Candolle.

The tree (No. 489 in the same collection) named *Quercus Brutia* seems somewhat intermediate in character between *Q. pedunculata* and *Q. sessiliflora*, and may be of hybrid origin. No. 474, a tree labelled *Quercus nova hollandica*, a name we cannot trace, is apparently only a form of *Q. pedunculata*.

Var. *purpurea* Hort.

No. 355, in the Oak collection on the Downs.

QUERCUS TOZA Bosc. Pyrenean Oak. S.W. France, Spain, and Portugal.

Loudon, iii. 1842 (1838); Elwes and Henry, v. 1313 (1910); Bean, ii. 326 (1914).

We have noted nine trees of this oak at Westonbirt. The finest specimen, probably one of the largest in the country, stands on the edge of a plantation by the farm, and is 65 to 70 ft. high by 5 ft. 1 in. in girth.

SILKWOOD. Nos. 476, 500, and 501, in the Oak collection in the Broad Drive, the two latter measuring 45 ft. by 3 ft. 8 in. and 51 ft. by

3 ft. 1 in. respectively. Other trees of similar size in Willesley Drive. No. 635, also in the Willesley Drive, measures 56 ft. by 3 ft. 11 in.

Var. *pendula* Dippel.

ARBORETUM. No. 242, in the Main Drive near the pool.
SILKWOOD. No. 374, going up the Waste.
The species was introduced about 1820.

QUERCUS TURNERI Willdenow. Turner's Oak. (? *Q. Ilex* × *pedunculata.*)

Loudon, iii. 1922 (1838); Elwes and Henry, v. 1288 (1910); Bean, ii. 326 (1914).

SILKWOOD. Small trees in the Broad Drive and in the Willesley Drive.

QUERCUS VARIABILIS Blume. Japan, Corea, China.

Elwes and Henry, v. 1276 (1910); Bean, ii. 327 (1914).

Two young plants in Rattray's Nursery, raised from acorns collected in Patung Hsien woods and near Ichang woods, Western Hupeh, by Wilson in 1907. (Nos. 532 and 534.)

First introduced by Fortune in 1861, and again by Bretschneider in 1882.

QUERCUS VELUTINA Lamarck. Black Oak. United States.

Loudon, iii. 1884 (1838); Sargent, Silva, viii. 137, tt. 414, 415 (1895); Elwes and Henry, v. 1239 (1910); Bean, ii. 327 (1914).

ARBORETUM. No. 352, in the Down Cover, a tree 65 ft. to 70 ft. by 3 ft. 1 in.

SILKWOOD. No. 406, in the Oak collection (Broad Drive), is a tree 33 ft. by 1 ft. 10 in. No. 409, a tree near the last, is 40 ft. by 2 ft.

Young plants of the following oaks were received from the Arnold Arboretum in 1925:

Quercus arkansana.
Q. bicolor.
Q. Deani.
Q. Durandi.
Q. glandulifera.
Q. grata.
Q. ilicifolia.
Q. Leana.

Quercus marilandica.
Q. montana.
Q. Muehlenbergi.
Q. Phellos.
Q. runcinata.
Q. Shumardii.
Q. stellata.

From the Edinburgh Botanic Gardens in 1923:

Quercus chrysolepis.
Q. dentata.
Q. dilatata.
Q. F. 22949 and 2234.
Q. glauca.
Q. incana.
Q. variabilis.

From Mr. J. C. Williams, Caerhayes, in 1923:

Quercus agrifolia.
Q. densiflora.
Q. Engelmanni.
Q. marilandica.

RHAMNUS IMERETINA Booth. (Family RHAMNACEAE.) Western Caucasus.

Bot. Mag., t. 6721 (1883) (as *R. libanotica*); Bean, ii. 333 (1914).

SILKWOOD. No. 729, an old plant, in the Willesley Drive.

RHODODENDRON (including Azaleas). (Family ERICACEAE.)

The following Rhododendrons (species and hardy hybrids) are in cultivation at Westonbirt.

Most of them have been planted in the Down Cover.

A. B. Mitford.
Abraham Dixon.
Alarm.
album elegans.
,, *grandiflorum.*
Alexander Dancer.
Alice.
altaclarense.
ambiguum.
amoenum.
apodectum.
Apollo.
arborescens.
arboreum.
,, 'blood-red'.
,, var. Sir Ch. Lemmon.
arboreum × *Thomsoni.*
argenteum.
arizelum.
Ascot Brilliant.
atrosanguineum.
August van Geert.
Augustini.
auriculatum.
,, × *Aucklandi.*
auriculatum × *discolor.*
,, × *ponticum.*
Aurora.

Bacchus.
Bagshot Ruby.
Baileyi.
barbatum.
Barclayanum.
B. de Bruin.
Baron Schroeder.
basilicum.
Beauty of Bagshot.
Beesianum.
Blandeanum.
Boothi.
brachycarpum.
Brayanum.
Britannia.
Broughtoni.
,, *aureum.*
B. W. Elliott.
calendulaceum.
calophytum.
campanulatum.
campylocarpum.
Caractacus.
C. B. van Ness.
Charles Dickens.
Charles Noble.
chloranthum (aff.).
ciliatum.
cinnabarinum.
,, var. *Roylei.*
cinnamomum album.
chaetomallum.
Clementinae.
concinnum.
Coombe Royal.
,, ,, × *Aucklandi.*
Cornish Cross.
cornubia.
Corona.
Corry Koster.
Countess of Cadogan.
,, ,, Tankerville.
croceum.
Crown Prince.
C. S. Sargent.
Cuffeanum.
Cunninghami.
Cynthia.
Daphne Millais.
Dawn's Delight.
decorum.
,, × *Aucklandi.*
desquamatum.
diaprepes × *auriculatum.*
dichroanthum.
discolor.
,, × *campylocarpum.*
Doncaster.
Dr. Stocker.
Duchess of Cambridge.
Duchess of Connaught.
Duchess of Cornwall.
,, ,, Portland.
,, ,, Sutherland.
Duchess of Teck.
Duke of Connaught.
,, ,, Cornwall.
,, ,, Portland.
Edmondi.
Edmondi × *Aucklandi.*
Elsae.
Everesteanum.
eximium.
Falconeri.
Fargesi.
fastuosum.
,, var. *flore pleno.*
Faust.
fictolacteum.
Fortunei.
Francis Dixon.
Frederick Waterer.
Fulgarb 484.
fulgens.
fulvoides.
fulvum.
F. V. Hayes.
Gauntletti × *Thomsoni.*
Gem.
genesterianum.
George Hardy.
George Paul.
Gill's Crimson.
,, Goliath.
,, Triumph.
glaucum.
glischrum.
Glory of Penjerrick.
Gomer Waterer.
govenianum.
Grand Arab.
grande.
Griersonianum.
Griffithianum.
,, × *Fortunei.*

Griffithianum ×
Loder's White.
Guido.
habrotrichum.
haematodes.
Harrisi.
H. H. Hunnewell.
Hodgsoni.
H. W. Sargent.
impeditum.
irroratum.
Ivery's Scarlet.
J. Marshall Brooke.
J. Spencer.
J. Tremayne.
James Bateman.
japonicum.
John Walter.
John Waterer.
Joseph Whitworth.
Kaempferi.
Kate Waterer.
Kettledrum.
kewense.
lacteum.
Lady Armstrong.
,, Claremont.
,, Clementina Mitford.
Lady Clementina Walsh.
Lady Constance.
,, de Rothschild.
,, Decies.
,, Eleanor Cathcart.
Lady Falmouth.
,, Gray Egerton.
Lady Gwendolin Brodrick.
Lady Hillingdon.
,, Tankerville.
lanatum.
ledifolium.
Lindleyi.
litiense.
Loderi.
Loder's White.
Lord Selborne.
,, Swaythling.
lucidum.
Luscombe.
Luscombe's Scarlet.
lutescens.
luteum.
Mackenzianum.
Madam Carvalho.
Maddeni ×.
Magnum Bonum.
Malton.
Manglesi.
Marchioness of Downshire.
Marchioness of Lansdowne.
Marchioness of Tweeddale.
Marie van Houtte.
Marquis of Waterford.
Martin H. Sutton.
maximum.
Maxwell T. Masters.
Melissa 619.
Memoir.
Meteor.
Michael Waterer.
Milton.
Minnie.
Miranda.
Morii.
Mrs. George Paul.
,, Henry Shilson.
,, John Clutton.
,, John Millais.
,, J. P. Lade.
,, Lindsay Smith.
,, Lionel Rothschild.
Mrs. R. G. Shaw.
,, R. S. Holford.
,, Samuel Walrock.
Mrs. Tom Agnew.
mucronulatum.
Murillo.
myrtilloides.
neriiflorum.
Nero.
niphargum.
niveum.
Nobleanum.
Old Port.
occidentale.
orbiculare.
oreodoxa.
oreotrephes.
Peter Koster.
phaeochrysum.
Pink Fairy.
,, Pearl.
planetum.
ponticum.
praecox.
Prince Albert.

RHUS COTINOIDES

In Arboretum

Prince Camille de Rohan.
Princess Juliana.
„ May of Cambridge.
Prometheus.
„ × *neriiflorum.*
prophantum.
prostratum.
prunifolium.
pubescens.
puralbum.
Purity.
purpureum elegans.
„ *grandiflorum.*
Queen Wilhelmina.
Regulus.
repens.
Rosa mundi.
„ „ × *Hookeri.*
roseum elegans.
Royal Purple.
rubicundum.
Sappho.
scabrifolium.
Sefton.
Sheffield Pink.
Shilsoni.
Sigismund Rucker.
Silvio.
Sinense.
sino-grande.
sino-Nuttalli.
Sir Isaac Newton.
Smirnowi.
Smithi aureum.
Snuff-eye.
Souliei.
Souliei × *Loderi.*
speciosum.
sperabile.
sphaeranthum.
Standishi.
Stella.
Strategist.
sutchuenense.
The Queen.
Thomsoni.
„ × *barbatum.*
Tintoretto.
Titian.
Towardii.
trichocladon.
triflorum.
Tschonoskii.
Unknown Warrior.
Van Dyck.
Vanguard.
Vauban.
vervaeneanum.
viscosum.
Warrior.
Wardii.
W. E. Gladstone.
Weyrichi.
Williamsianum.
yunnanense.
zaleucum.

RHUS COPALLINA Linnaeus. Dwarf Sumach. (Family ANACARDIACEAE.) Eastern North America.

Bean, ii. 391 (1914).

ARBORETUM. Two plants in Victory Glade.

PLEASURE GROUNDS. No. 1537, in front of churchyard wall.

Introduced about 1688.

RHUS COTINOIDES Nuttall. Chittim Wood. South-eastern United States.

Bean, ii. 391 (1914).

ARBORETUM. No. 70, in the Straight Drive. No. 275, in the Main Drive near the Pool Gate, is an unusually fine specimen, 12 ft. high. (Plate 48.)

Silkwood. No. 445, in the Broad Drive.

Pleasure Grounds. No. 1339, near the old Scots pine, is about 11 ft. high. No. 1394, below the Long Terrace, is probably the tallest specimen at Westonbirt, being 14 ft. high.

This is one of the most attractive shrubs in autumn, the leaves turning various shades of scarlet, claret colour, and orange before they fall. It is much less common in cultivation than the next.

RHUS COTINUS Linnaeus. Venetian Sumach, Smoke Plant, Wig Tree. Middle and Southern Europe, Himalayas.

Bean, ii. 392 (1914).

Common at Westonbirt.

Pleasure Grounds. The old plant (No. 1408) on the Terrace is no less than 70 ft. round, and has now to be supported by stakes. It presents a striking object in summer when covered with its large smoky grey patches of hairy flower-stalks (Plate 49).

Var. *atropurpurea* Hort.

Arboretum.

RHUS GLABRA Linnaeus. Eastern United States.

Bean, ii. 392 (1914).

Frequent.

Var. *laciniata* Carrière.

Arboretum. A very handsome foliage plant, the large feathery leaves being especially striking in the autumn, when they turn a brilliant scarlet.

RHUS OSBECKI Steudel. China, Japan.

Bean, ii. 393 (1914).

Arboretum. No. 290, in Pool Avenue.

Pleasure Grounds. On the West bastion centre wall.

Silkwood. Group of plants (No. 442) in the Broad Drive. No. 534, in the Willesley Drive.

RHUS COTINUS

In Pleasure Grounds

RHUS POTANINI Maximowicz. (*R. sinica* Hort.) North China.

Bean, ii. 393 (1914).

Arboretum. No. 220, at Clay Island, is an unusually fine plant about 30 ft. high; No. 287, in Pool Avenue. Specimen Avenue plant added 1923. Other good plants elsewhere.

Pleasure Grounds. New Ground, No. 1368.

A most effective foliage plant, especially in autumn, when the leaves turn a bright scarlet.

Introduced in 1907.

RHUS TRICHOCARPA Miquel. Japan.

Bean, ii. 395 (1914).

Small plant received from Kew.

Introduced about 1897.

RHUS TYPHINA Linnaeus. Stag's Horn Sumach. Eastern North America.

Bean, ii. 395 (1914).

Pleasure Grounds and Silkwood.

Var. *laciniata* Wood.

Arboretum. No. 80, in the Main Drive.

The species has been known in cultivation since early in the seventeenth century.

RHUS VERNICIFERA De Candolle. Lacquer Tree. Central and West China.

Bean, ii. 396 (1914).

Arboretum. No. 291, in Pool Avenue.

This tree yields the well-known lacquer or varnish of China.

RIBES AMERICANUM Miller. American Black Currant. (Family Saxifragaceae.) Eastern North America.

Bean, ii. 398 (1914).

Garden Cover.

Introduced in 1729.

RIBES AUREUM Pursh. Buffalo Currant. Central United States.

Bot. Reg., t. 125 (1816); Bean, ii. 398 (1914).

ARBORETUM. No. 106, in the Main Drive.

Introduced in 1812.

RIBES GORDONIANUM Lemaire. (*R. aureum* × *sanguineum.*)

Bean, ii. 402 (1914).

Garden Cover.

Raised about 1837.

RIBES SANGUINEUM Pursh. Flowering Currant. Western North America.

Bot. Mag., t. 3335 (1834); Bean, ii. 407 (1914).

Frequent.

One of the best of the spring flowering shrubs; it was introduced by Douglas in 1826.

RIBES SPECIOSUM Pursh. California.

Bot. Mag., t. 3530 (1836); Bean, ii. 408 (1914).

PLEASURE GROUNDS.

Introduced in 1828.

ROBINIA KELSEYI Cowell. (Family LEGUMINOSAE.) ? Southern Alleghany Mountains.

Bot. Mag., t. 8213 (1908); Elwes and Henry, vi. 1508 (1912); Bean, ii. 410 (1914).

ARBORETUM. No. 264, in the Main Drive near the Down Cover. Two good plants in the Loop Walk.

PLEASURE GROUNDS. No. 1322, east of the lake.

This beautiful shrub, which is one of the most striking of the recent introductions, was sent to Kew in 1903.

ROBINIA PSEUDACACIA Linnaeus. False Acacia, Locust. Eastern United States.

Loudon, ii. 609 (1838); Sargent, Silva, iii. 39, tt. 112, 113 (1892); Elwes and Henry, vi. 1497 (1912); Bean, ii. 412 (1914).

Common at Westonbirt.

Pleasure Grounds. No. 1382, measuring 61 ft. by 4 ft. 10 in.

Silkwood. The collection of Robinias in the Willesley Drive consists for the most part of forms of this species, including the following varieties :

Var. *Decaisneana* Carrière.

Silkwood. No. 605 in the collection in Willesley Drive.

Var. *microphylla* Hort.

Silkwood. No. 604 in the collection.

Arboretum. Rattray's Nursery.

Var. *monophylla* Carrière.

Silkwood. No. 593 in the collection.

Var. *semperflorens* Carrière.

Silkwood. No. 1528, in the Broad Drive.

The *Robinia* was cultivated in England in the seventeenth century.

ROBINIA VISCOSA Ventenat. Clammy Locust. Mountains of Carolina.

Bot. Mag., t. 560 (1801) (as *R. glutinosa*) ; Loudon, ii. 626 (1838) ; Sargent, Silva, iii. 45, t. 115 (1892) ; Elwes and Henry, vi. 1507 (1912) ; Bean, ii. 413 (1914).

Silkwood. No. 560, in the Willesley Drive, a tree 40 ft. high by 3 ft.

Introduced in 1797.

ROSA BRACTEATA Wendland. Macartney Rose. (Family Rosaceae.) China.

Bot. Mag., t. 1377 (1811).

Pleasure Grounds. Wall of Italian Garden.

Introduced in 1793 by Lord Macartney.

ROSA HUGONIS Hemsley. West China.

Bot. Mag., t. 8004 (1915) ; Bean, ii. 429 (1914).

Arboretum. Several plants at Clay Island.

Old Nursery.

First raised at Kew in 1899.

ROSA MOYESII Hemsley and Wilson. West China.

Bot. Mag., t. 8338 (1910); Bean, ii. 435 (1914).

Arboretum and Pleasure Grounds.

Introduced by Wilson about 1903.

The lurid crimson flowers followed by the red bottle-shaped fruits make this the finest of all the Chinese briars.

ROSA OMEIENSIS Rolfe. Mount Omi Rose. Szech'uan, China.

Bot. Mag., t. 8471 (1912); Bean, ii. 438 (1914).

Arboretum. Wigmore Bottom.

Introduced by Wilson in 1901.

ROSA RUGOSA Thunberg. Japan.

Bot. Reg., t. 420 (1819) as '*R. ferox* Laurence'.

Arboretum and Pleasure Grounds.

ROSA SERICEA Lindley. North India.

Bean, ii. 442 (1914).

Var. *pteracantha* Franchet. West China.

Bot. Mag., t. 8218 (1908).

Old Nursery.

The blood-red translucent spines make this a peculiarly attractive rose.

ROSA SETIPODA Hemsley and Wilson. Central China.

Bean, ii. 443 (1914).

Arboretum. Plants at Clay Island.

Introduced before 1909.

ROSA SPINOSISSIMA Linnaeus. Scotch or Burnet Rose. Europe (including Britain). North Asia.

Bot. ii. 445 (1914).

Arboretum.

ROSA WILMOTTAE Hemsley. West China.

Bot. Mag., t. 8186 (1908); Bean, ii. 448 (1914).

Pleasure Grounds.

RUBUS BAMBUSARUM Focke. (Family Rosaceae.) Central and West China.

Bean, ii. 454 (1914).

Old Nursery.

Introduced in 1900.

RUBUS BIFLORUS Buchanan-Hamilton. Himalaya.

Bot. Mag., t. 4678 (1852); Bean, ii. 454 (1914).

Arboretum and Pleasure Grounds.

Introduced in 1818.

RUBUS DELICIOSUS James. Rocky Mountains.

Bot. Mag., t. 6062 (1873); Bean, ii. 457 (1914).

Arboretum.

Introduced in 1870.

RUBUS GIRALDIANUS Focke. China.

Bean, ii. 458 (1914).

Arboretum and Pleasure Grounds.

The best of the white-stemmed brambles, the canes in winter appearing as if whitewashed.

Introduced in 1907.

RUBUS LASIOSTYLUS Focke. Central China.

Bot. Mag., t. 7426 (1895); Bean, ii. 462 (1914).

Old Nursery.

Introduced in 1889.

RUBUS PHOENICOLASIUS Maximowicz. Japanese Wineberry.

Bot. Mag., t. 6479 (1880); Bean, ii. 466 (1914).

Kitchen Garden.

Introduced about 1876.

RUBUS THIBETANUS Franchet. (*R. Veitchii* Rolfe.) West China.

Bean, ii. 468 (1914).

Pleasure Grounds.

Introduced in 1908.

RUBUS TRICOLOR Franchet. West China.

Bean, ii. 469 (1914).

Walk under high road archway, where it is spreading rapidly among the surrounding vegetation.

Very distinctive on account of its bristling stems and leaf-stalks.

Introduced by Wilson in 1908.

SALIX BABYLONICA Linnaeus. Weeping Willow. (Family Salicaceae.) China.

Forbes, Salict. Woburn, t. 22 (1829); Loudon, iii. 1507 and iv. 2588 (1838); Elwes and Henry, vii. 1749 (1913); Bean, ii. 476 (1914).

A tree in the Old Nursery was 35 ft. high by 3 ft. 6 in. in girth in 1920.

Arboretum. Two trees in the Main Drive.

Introduced into England before 1730.

SALIX BOCKII Diels. Western Szech'uan, China.

Bean, ii. 477 (1914); Bot. Mag., 9079 (1925).

Kitchen Garden Nursery.

Introduced in 1910.

SALIX COERULEA Smith. Cricket-bat Willow. Eastern England.

Smith, English Botany, t. 2431 (1812); Forbes, t. 137 (1829); Loudon, iii. 1523 (1838); Kew Bulletin, 1907, p. 312 with figure, and 1912, p. 205; Elwes and Henry, vii. 1763 (1913); Bean, ii. 479 (1914).

Young tree in Old Nursery received with others from Lockinge.

The origin of *S. coerulea* is somewhat obscure, but it appears to be confined to the eastern counties, where it has been known for more than a century.

SALIX DAPHNOIDES Villars. Europe eastwards to Siberia and the Himalayas.

Forbes, Salict. Woburn, t. 26 (1829); Bean, ii. 480 (1914).

Old Nursery. A tree 33 ft. high by 2 ft. in girth.

The violet-coloured waxy bloom of the shoots makes this an effective willow, especially in winter.

SALIX INCANA Schrank. Europe, Asia Minor.

Forbes, Pinet. Woburn, t. 90 (1829); Bean, ii. 483 (1914).

Old Nursery.

Introduced about 1820.

SALIX LANATA Linnaeus. Europe (including Scotland), Asia.

Forbes, Salict. Woburn, t. 71 (1829); Bean, ii. 483 (1914).

Kitchen Garden Nursery. A rare Scottish willow, found wild in Perthshire, Forfarshire, and Aberdeenshire, and well worth cultivation. It is one of the handsomest of the dwarf species, especially in spring, when its golden catkins and woolly foliage are most attractive.

SALIX MAGNIFICA Hemsley. West China.

Bean, ii. 484 (1914).

Arboretum. Two young trees (Nos. 285 and 285 a) in Pool Avenue, planted in 1921.

Introduced in 1910.

SALIX PENTANDRA Linnaeus. Bay Willow. Europe, North Asia, China.

Forbes, Salict. Woburn, t. 34 (1829); Loudon, iii. 1503 (1838); Elwes and Henry, vii. 1747 (1913); Bean, ii. 486 (1914).

Park. A good-sized tree (No. 1469), 35 ft. by 4 ft. 4 in., on the edge of a pond near Pickard's lodge.

SALIX PURPUREA Linnaeus. Britain eastwards through Europe to Asia Minor.

Smith, English Botany, 1388 (1805); Forbes, Salict. Woburn, tt. 1, 2, and 3 (1829); Bean, ii. 488 (1914).

Old Nursery.

Var. *pendula* Dippel.

Pleasure Grounds. No. 1266, on Rockery.

SALIX SMITHIANA Willdenow. Europe, including Britain. Hybrid origin.

Forbes, Salict. Woburn, t. 134 (1829); Bean, ii. 490 (1914).

Var. *sericans* Tausch. (*S. caprea* × *viminalis.*)

Old Nursery.

SALIX VITELLINA Linnaeus. Golden Willow.

Forbes, Salict. Woburn, t. 20 (1829); Loudon, iii. 1528 (1838); Elwes and Henry, vii. 1768 (1913); Bean, ii. 493 (1914).

Commonly planted at Westonbirt. Its bright yellow twigs are very effective in winter.

Var. *britzensis* Späth.

Arboretum. No. 61, in the Straight Drive; a good-sized tree.

A tree in the Old Nursery is 62 ft. by 5 ft. 4 in. Broad Avenue, several good trees.

Park. Clumps of this willow massed here and there in the open park are pruned hard every year or two, after which they send up thickets of wand-like flame-coloured shoots. The effect of these when seen afar off in the winter sunshine is very striking.

This variety has long been known at Westonbirt as *Salix cardinalis,* but the true cardinal willow belongs to another species (*S. decipiens*).

Var. *pendula* Hort.

Arboretum. Down Pool, two trees.

Pleasure Grounds. (Plate 65.) A beautiful specimen (No. 1238) on the Terrace. This weeping form is often found in gardens under the erroneous name of *Salix babylonica* var. *ramulis aureis.*

GROUP OF WELLINGTONIAS

In Arboretum

WELLINGTONIAS (THREE SISTERS)

In Straight Drive

SAMBUCUS RACEMOSA Linnaeus. Red-berried Elder. (Family Caprifoliaceae.) Europe, Asia Minor, Siberia, North China.

Bean, ii. 496 (1914).

Var. *laciniata* Koehne.

Old Nursery.

The red-berried elder is a very beautiful shrub when in fruit.

Cultivated in England since the sixteenth century.

SCIADOPITYS VERTICILLATA Siebold and Zuccarini. Umbrella Pine. (Family Pinaceae.) Japan.

Bot. Mag., t. 8050 (1905); Elwes and Henry, iii. 568 (1908); Clinton-Baker, ii. 65 (1909); Bean, ii. 506 (1914); Dallimore and Jackson, 486 (1923).

This is one of the few conifers which do not thrive at Westonbirt. A specimen in the garden (No. 1209) behind the stables, although planted many years ago, has made little growth, and another in the Arboretum (Specimen Avenue) was in such an unhealthy state in 1923 that it had to be removed.

Introduced into England in 1861 by J. G. Veitch.

SEQUOIA GIGANTEA Decaisne. Wellingtonia. (Family Pinaceae.) Sierra Nevada of California.

Bot. Mag., tt. 4777, 4778 (1854); Sargent, Silva, x. 145, t. 536 (1896) (as *Sequoia Wellingtonia*); Elwes and Henry, iii. 699 (1908); Clinton-Baker, ii. 63 (1909); Dallimore and Jackson, 490 (1923); Bean, ii. 508 (1914).

Arboretum. In the Main Drive is a tree which is 104 ft. high by 15 ft. 6 in. in girth, and the tallest *Wellingtonia* at Westonbirt. A group of three trees in the Straight Drive, known as 'The Three Sisters', were planted by the Misses Holford about 1865, and the tallest is now 85 ft. by 13 ft. (Plate 50). Two imposing groups of Wellingtonias in the Broad Avenue at entrance to the Lime Avenue are well represented in the photograph (Plate 51); they have recently had their lower branches removed and now show a clean bole of about 30 ft.

This remarkable conifer, which exceeds in age, height, and girth all known trees, was introduced into cultivation in 1853 by Mr. J. D. Matthews and the Veitchian collector Lobb.

Pleasure Ground.

The oldest *Wellingtonia* at Westonbirt was planted in the Garden in 1855, soon after the species was introduced. It is therefore one of the oldest in the country. Its present dimensions are 92 ft. high by 15 ft. 8 in.

SEQUOIA SEMPERVIRENS Endlicher. Redwood. S.W. Oregon and California, but confined to the coast.

Loudon, iv. 2487 (1838) (as *Taxodium sempervirens*); Sargent, Silva, x. 141, t. 535 (1896); Elwes and Henry, iii. 688 (1908); Clinton-Baker, ii. 64 (1909); Bean, ii. 510 (1914); Dallimore and Jackson, 493 (1923).

Two trees by walk under the high road archway, each about 74 ft. high by 10 ft. in girth.

Arboretum. A very fine group of six trees near Wigmore Bottom, and planted about 1867. They are about 90 ft. high and from 10 to 11 ft. in girth. Another tree (No. 926) in the Main Drive is 80 ft. by 11 ft. 6 in. in girth.

Pleasure Grounds. No. 1327, east of the lake, a tree 68 ft. high.

Silkwood. Trees planted about 1877 are now up to 75 ft. high.

Introduced about 1843.

SOPHORA JAPONICA Linnaeus. (Family Leguminosae.) China.

Loudon, ii. 563 (1838); Elwes and Henry, i. 37 (1906); Bean, ii. 520 (1914).

Pleasure Grounds. An old tree (No. 1431) near the Sunken Garden is about 60 ft. high by 9 ft. 2 in. in girth.

The *Sophora*, which was introduced into cultivation in 1753, is one of the most beautiful trees of its family.

Var. *variegata* Hort.

Arboretum. No. 123, in the Main Drive.

Introduced into England about 1843.

SOPHORA TETRAPTERA Aiton. New Zealand.

Bean, ii. 521 (1914).

Arboretum. Young plants in Down Cover, received in 1921.

Pleasure Grounds. An old specimen on wall of plant-houses.

Introduced in 1772.

SPIRAEA AITCHISONI Hemsley. (Family ROSACEAE.) Afghanistan, Kashmir, &c.

Bean, ii. 527 (1914).

Several groups in Arboretum and Pleasure Grounds, where it makes a handsome shrub.

SILKWOOD. Planted largely in Sand Earth Corner.

Introduced in 1895.

SPIRAEA ARGUTA Zabel. Hybrid origin.

Bean, ii. 527 (1914).

PLEASURE GROUNDS. Lower end of garden, near the Old Scots pines, New Ground.

SPIRAEA BRACTEATA Zabel. Japan.

Bot. Mag., t. 7429 (1895); Bean, ii. 529 (1914).

SILKWOOD. No. 718, in the Willesley Drive.

SPIRAEA CANESCENS Don. Himalaya.

Bean, ii. 531 (1914).

PLEASURE GROUNDS.

Introduced in 1837.

SPIRAEA DISCOLOR Pursh. (*Spiraea ariaefolia* Sm.) Western North America.

Bean, ii. 533 (1914).

ARBORETUM. A fine plant near the entrance gate.

PLEASURE GROUNDS. Near Sunken Garden.

SILKWOOD. No. 715, in the Willesley Drive.

Introduced by Douglas in 1827.

SPIRAEA HYPERICIFOLIA Linnaeus. Europe, Asia.

Bean, ii. 535 (1914).

SILKWOOD. No. 369, in the Waste.

SPIRAEA JAPONICA Linnaeus fil. Japan, China.

Bot. Mag., t. 5164 (1859) (as *S. Fortunei*); Bean, ii. 536 (1914).

Frequent at Westonbirt in one or other of its forms.

SPIRAEA LINDLEYANA Wallich. Himalaya.

Bean, ii. 537 (1914).

Groups in the Arboretum and Pleasure Grounds.

SPIRAEA PRUNIFOLIA Siebold. China.

Bean, ii. 541 (1914).

Var. *flore pleno* Hort.

Arboretum. Frequent.

Pleasure Grounds.

The double-flowered form is a very striking shrub when in flower.

SPIRAEA SORBIFOLIA Linnaeus. Asia.

Bean, ii. 543 (1914).

Arboretum. An old plant (No. 98) in the Straight Drive. A handsome shrub allied to *S. Lindleyana*, but of taller growth, being sometimes 30 ft. high.

Introduced in 1759.

SPIRAEA VAN HOUTTEI Zabel. Hybrid origin.

Bean, ii. 544 (1914).

Arboretum and Pleasure Grounds, where it produces masses of white blossom in early June, and is then a most attractive shrub.

First raised in 1862.

SPIRAEA VEITCHII Hemsley. Central China.

Bot. Mag., t. 8283 (1911); Bean, ii. 545 (1914).

Arboretum. No. 101, in the Main Drive.

Pleasure Grounds.

Introduced by Wilson about 1900.

STACHYURUS PRAECOX Siebold. (Family TERNSTROEMIACEAE.) Japan.

Bot. Mag., t. 6631 (1882); Bean, ii. 545 (1914).

ARBORETUM. Texas.

STAPHYLEA HOLOCARPA Hemsley. (Family STAPHYLEACEAE.) Central China.

Bean, ii. 549 (1914); Bot. Mag., t. 9074 (1925).

Old Nursery. A plant of some years' growth; flowered for the first time in 1925, and a flowering spray sent to the Chelsea Show of that year obtained an award of merit, on account of the beauty of its flowers. These are of a delicate rosy pink, fading to white, and appear in graceful festoons with the expanding young leaves at the beginning of June.

Introduced by Wilson in 1908.

STEPHANANDRA FLEXUOSA Siebold. (Family ROSACEAE.) Japan, Corea.

Bean, ii. 551 (1914).

PLEASURE GROUNDS.

Introduced in 1872.

STEPHANANDRA TANAKAE Franchet. Japan.

Bot. Mag., t. 7593 (1898); Bean, ii. 551 (1914).

ARBORETUM. Wigmore Bottom. Clay Island.

Introduced to Kew in 1893.

STEWARTIA PSEUDO-CAMELLIA Maximowicz. (Family TERNSTROEMIACEAE.) Japan.

Bot. Mag., t. 7045 (1889); Bean, ii. 555 (1914).

ARBORETUM. Young plant in the Down Cover.

Introduced by Messrs. Veitch since 1878.

STRANVESIA UNDULATA Decaisne. (Family ROSACEAE.) China.

Bot. Mag., t. 8418 (1912); Bean, ii. 556 (1914).

ARBORETUM, PLEASURE GROUNDS, and SILKWOOD.

A charming shrub, seen to the best advantage at Westonbirt, where it produces abundant crops of its brilliant red berries, and the leaves turn red in autumn.

Introduced by Wilson about 1901.

STYRAX JAPONICUM Siebold. (Family STYRACEAE.) Japan, Corea.

Bot. Mag., t. 5950 (1872) (as *S. serrulatum*); Bean, ii. 558 (1914).

SILKWOOD. Young plant added 1924.

Introduced to Kew in 1862.

SYMPHORICARPUS ORBICULATUS Moench. Coral Berry. (Family CAPRIFOLIACEAE.) Eastern United States.

Bean, ii. 563 (1914).

PLEASURE GROUNDS.

Introduced in 1730.

SYMPHORICARPUS RACEMOSUS Michaux. Snowberry. North America.

Bean, ii. 564 (1914).

ARBORETUM and PLEASURE GROUNDS.

The form in cultivation here belongs to the variety *laevigatus* Fernald.

Introduced in 1817.

SYRINGA EMODI Wallich. Himalayan Lilac. (Family OLEACEAE.)

Bean, ii. 566 (1914).

ARBORETUM. No. 61, in the Main Drive.

PLEASURE GROUNDS. No. 1427, above the Sunken Garden.

Var. *variegata* Hort.

PLEASURE GROUNDS. No. 1426, above the Sunken Garden.

SYRINGA FORMOSISSIMA Nakai. Corea.

Tokyo Bot. Mag., 1917, p. 105.

Var. *hirsuta* Wilson.

Kitchen Garden Nursery.

SYRINGA PEKINENSIS Ruprecht. Mountains of North China.

Bean, ii. 569 (1914).

Garden Plantation. Specimen received from Kew in 1919. First raised at Kew in 1881.

SYRINGA POTANINI C. K. Schneider. China.

Pl. Wils. i. 297 (1911).

Orchid Nursery.

SYRINGA VULGARIS Linnaeus. Common Lilac. Mountain regions of East Europe.

Bean, ii. 573 (1914).

The following varieties are grown at Westonbirt:

Charles X.
Congo.
Mme F. Morel.
Mme Lemoine.
Marie Legraye.
Miss E. Wilmott.
M. Leon Matthew.
Negro.
Souvenir de Louis Spath.
Vulcan.

TAXODIUM DISTICHUM Richard. Deciduous Cypress. (Family PINACEAE.) Southern United States.

Loudon, iv. 2481 (1838); Sargent, Silva, x. 151, t. 537 (1896); Elwes and Henry, i. 173 (1906); Clinton-Baker, ii. 70 (1909); Bean, ii. 578 (1914); Dallimore and Jackson, 497 (1923).

ARBORETUM. Young plants in Victory Glade.

PLEASURE GROUNDS. No. 549. No. 1263, a tree about 35 ft. high.

Introduced early in the seventeenth century.

TAXUS BACCATA Linnaeus. Common Yew. (Family TAXACEAE.) Europe (including Britain), North Africa, West Asia.

Loudon, iv. 2068 (1838); Elwes and Henry, i. 100 (1906); Bean, ii. 579 (1914); Dallimore and Jackson, 62 (1923).

The fine old yew on the lawn south of the house (Plates 52 and 53) is 58 ft. high by 12 ft. in girth, and must be of great age, but its date of planting is uncertain.

Var. *adpressa* Carrière.

Arboretum. Several fine bushes, one (No. 785) in the Main Drive being 40 ft. in diameter and 18 ft. high.

Var. *aurea* Carrière. Golden Yew.

Pleasure Grounds. The golden yew by the Rockery (Plate 54), believed to be the finest known specimen of this variety, has attained a height of 40 ft. by 5 ft. 4 in. at 4 ft.

Var. *Dovastoni* Loudon. Dovaston Yew.

Pleasure Grounds.

Var. *fastigiata* Loudon. Irish Yew.

Arboretum and Pleasure Grounds. One specimen on the Terrace is 21 ft. high.

Var. *fastigiata aurea* Standish.

Pleasure Grounds.

The common yew, when used indiscriminately in plantations, produces more often than not a gloomy and monotonous effect. It far outnumbers any other conifer at Westonbirt, but the late Mr. R. S. Holford (Sir George's father), with admirable foresight, put a girdle of yews round the Arboretum with such skill that each specimen group of trees and shrubs now stands against a perfect background.

TAXUS CUSPIDATA Siebold and Zuccarini. Japanese Yew.

Siebold and Zuccarini, Fl. Jap., ii. 61, t. 128 (1870); Elwes and Henry, i. 100, 31 (1906) (as *T. baccata* var. *cuspidata*); Bean, ii. 582 (1914); Wilson, Conifers of Japan, 11 (1916); Dallimore and Jackson, 71 (1923).

Arboretum. Young plants added 1925.

Introduced by Fortune about 1855.

OLD YEW

In Pleasure Grounds

BOLE OF OLD YEW

In Pleasure Grounds

TETRACENTRON SINENSE Oliver. (Family TROCHODENDRACEAE.) China.

Bean, ii. 584 (1914).

ARBORETUM. Down Cover.

Introduced by Wilson for Messrs. Veitch in 1901.

THUYA DOLABRATA Linnaeus. (Family PINACEAE.) Japan.

Elwes and Henry, ii. 202 (1907) (as *Thujopsis dolabrata*); Bean, ii. 585 (1914); Wilson, Conifers of Japan, 71 (1916) (as *Thujopsis dolabrata*); Dallimore and Jackson, 503 (1923).

PLEASURE GROUNDS. No. 1420, on the Terrace, an unusually good specimen 30 ft. high and about 22 yards round.

Var. *laete-virens* Lindley.

PLEASURE GROUNDS. Plants on Rockery.

Var. *variegata* Fortune.

ARBORETUM. No. 987, in the Main Drive, a tree 40 ft. high.

The species was first introduced in 1853.

THUYA JAPONICA Maximowicz. Japan.

Elwes and Henry, i. 195 (1906); Bean, ii. 586 (1914); Dallimore and Jackson, 507 (1923).

SILKWOOD. No. 1098, in the Willesley Drive, a well-grown specimen measuring 35 ft. by 2 ft. 6 in., and planted about 1875.

Introduced by Fortune in 1860, who sent seeds to the nursery of Mr. Standish at Ascot. It was long known in gardens under the name of *Thuya Standishi*.

THUYA KORAIENSIS Nakai. Corea.

Dallimore and Jackson, 508 (1923).

Small plant in Nursery.

THUYA OCCIDENTALIS Linnaeus. American Arbor Vitae. Eastern North America, from Nova Scotia to Virginia.

Loudon, iv. 2454 (1838); Sargent, Silva, x. 126, t. 532 (1896); Elwes and Henry, i. 191 (1906); Bean, ii. 586 (1914); Dallimore and Jackson, 508 (1923).

PLEASURE GROUNDS and SILKWOOD.

Var. *aurea* Nicholson.

ARBORETUM. A group of five young trees in the Straight Drive (No. 780), planted about 1909, are now 16 ft. high.

SILKWOOD. A good specimen (No. 1092) in the Willesley Drive is very effective in winter against the dark green of other conifers.

Var. *Vervaeneana* Henkel and Hochstetter.

ARBORETUM. No. 910, in the Main Drive.

Var. *Wareana* Beissner.

PLEASURE GROUNDS. No. 1351, an old specimen near the Church, is 32 ft. high.

The species has been cultivated in England since the sixteenth century.

THUYA ORIENTALIS Linnaeus. Chinese Arbor Vitae. Mountains of North China.

Loudon, iv. 2459 (1838); Elwes and Henry, i. 197 (1906); Bean, ii. 587 (1914); Dallimore and Jackson, 513 (1923).

PLEASURE GROUNDS. An old specimen of columnar habit (No. 1239) on the Terrace is 28 ft. high by 5 ft. 3 in. at the base.

Var. *elegantissima* Gordon.

ARBORETUM. Wigmore Clump.

PLEASURE GROUNDS. No. 543, in clump near the Conservatory, is a very handsome plant, the foliage variegated with bronze and gold being particularly noticeable in winter.

Var. *decussata* Beissner and Hochstetter.

An old plant of this very distinct variety is growing in the Kitchen Garden.

THUYA PLICATA D. Don. (*T. Lobbi* Hort.) Giant Thuya. British Columbia, Oregon, and Washington.

Sargent, Silva, x. 129, t. 533 (1896) (as *T. gigantea*); Elwes and Henry, i. 184 (1906); Bean, ii. 588 (1914); Dallimore and Jackson, 518 (1923).

Many fine specimens.

GOLDEN YEW

In Pleasure Grounds

ARBORETUM. In Specimen Avenue are two well-furnished trees about 75 ft. high. There is a fine group of trees in Loop Walk, 65 ft. to 70 ft. high.

SILKWOOD. Several good trees.

Introduced in 1853 by Lobb.

Var. *zebrina* Hort.

ARBORETUM. No. 758, in Wigmore Clump.

PLEASURE GROUNDS. No. 1185, in shrubbery below the Terrace.

Garden Plantation. Old Nursery.

TILIA ARGENTEA Desfontaines. White Lime. (Family TILIACEAE.)

South-east Europe, Asia Minor.

Loudon, i. 372 (1838); Elwes and Henry, vii. 1675 (1913) (as *T. tomentosa*); Bean, ii. 596 (1914) (as *T. tomentosa*).

SILKWOOD. We have noted about eight trees in the wood, the best being a fine spreading tree (No. 695) in the Willesley Drive, measuring 65 ft. by 9 ft. 4 in. No. 378, near the Waste Gate, measures 51 ft. 6 in. by 4 ft. 3 in. There are other trees of smaller dimensions in the Willesley Drive and elsewhere.

The white lime was introduced into England in 1767.

TILIA CORDATA Miller. Small-leaved Lime. Europe (including England), Caucasus.

Loudon, i. 364 (1838) (under *T. europaea*); Elwes and Henry, vii. 1656 (1913); Bean, ii. 590 (1914).

SILKWOOD. No. 725, in the Willesley Drive.

TILIA EUCHLORA Koch. (*T. dasystyla* Jack.) ? Hybrid origin.

Elwes and Henry, vii. 1674 (1915); Bean, ii. 590 (1914).

PARK. A small tree (No. 1473) in the lower park by the Sherborne which has lost its top.

SILKWOOD. No. 392, in the Broad Drive, is a tree 37 ft. by 3 ft. 1 in. No. 708, in the Willesley Drive, is one of the handsomest of the limes on account of its glossy foliage, which never seems to suffer from insect attacks.

TILIA MICHAUXII Nuttall. Eastern North America.

Elwes and Henry, vii. 1689 (1913); Bean, ii. 592 (1914).

Silkwood. Two trees (Nos. 393 and 449) in the Broad Drive, the first measuring 35 ft. 6 in. by 2 ft. 8 in., and the second 35 ft. by 2 ft. In the Willesley Drive there is a much larger tree (No. 677), which is 62 ft. by 4 ft. 3 in. No. 701, also in the Willesley Drive, is 50 ft. by 3 ft. 6 in. A smaller tree (No. 721) in the same drive was formerly labelled *T. pubescens.* All these were probably planted about 1878.

This lime seems to be intermediate in character between *T. americana* and *T. heterophylla.* The smaller trees of *T. Michauxii* in Silkwood sometimes produce exceptionally large leaves, and we have measured several over a foot in length.

TILIA OLIVERI Szyszylowicz. Chinese Lime. Central China.

Hooker, Icon. Plant. ad., t. 1927 (1890); Elwes and Henry, vii. 1681 (1913); Bean, ii. 593 (1914); Pl. Wils. ii. 368 (1915).

Arboretum. A tree (No. 233), moved from Clay Island to Specimen Avenue, is now 19 ft. high. A young tree (No. 346) in the Down Cover.

This lime, which, according to Wilson (loc. cit.), is very abundant in the moist woods of north-west Hupeh, was introduced by him in 1900.

TILIA PETIOLARIS Hooker. Weeping White Lime. Origin unknown.

Bot. Mag., t. 6737 (1884); Elwes and Henry, vii. 1677 (1913); Bean, ii. 594 (1914).

Silkwood. Several good trees, the best being one (No. 702) in Willesley Drive, measuring about 70 ft. by 4 ft. 5 in. No. 572, also in the Willesley Drive, is a tree 58 ft. 6 in. by 4 ft. 9 in. No. 395, in the Broad Drive, is 53 ft. by 3 ft. 6 in. and 6 ft. 5 in. in girth, and has a spread of 43 ft.

This remarkable lime, one of the handsomest on account of its weeping foliage, is only known as a cultivated tree, and appears to have been introduced into England from the Continent about the middle of the last century.

LIME AVENUE

In Arboretum

TILIA PLATYPHYLLOS Scopoli. Large-leaved Lime. Central and Southern Europe (including England).

Loudon, i. 364 (1838) (under *T. europaea*); Elwes and Henry, vii. 1661 (1913); Bean, ii. 595 (1914).

Var. *asplenifolia* Kirchner.

SILKWOOD. No. 564, in the Willesley Drive.

PLEASURE GROUNDS. An old specimen (No. 1439) near the Sunken Garden is 40 ft. by 2 ft. 11 in.

TILIA VULGARIS Hayne. Common Lime. ? Hybrid origin.

Loudon, i. 364 (1838); Elwes and Henry, vii. 1664 (1913); Bean, ii. 597 (1914).

The Lime Avenue in the Arboretum is a cross Avenue connecting the Main Avenue with the Broad Ride, and consists of thirty-three trees planted in 1870 (Plate 55). Most of the trees belong to the common species, but one or more are *T. platyphyllos*. The tallest tree has attained a height of 75 ft. by 5 ft. 4 in. They have recently had their lower branches removed to the height of 40 ft.

TORREYA CALIFORNICA Torrey. Californian Nutmeg. (Family TAXACEAE.) California.

Bot. Mag., t. 4780 (1854) (as *T. myristica*); Sargent, Silva, x. 59, t. 513 (1896) (as *Tumion californicum*); Clinton-Baker, iii. 60 (1913); Elwes and Henry, vi. 1465 (1912); Bean, ii. 598 (1914); Dallimore and Jackson, 73 (1923).

ARBORETUM. An unusually fine specimen (No. 961) stands in a shaded position in the Main Drive, and measures 37 ft. by 3 ft. 6 in. In 1907 its dimensions according to Elwes were 29 ft. by 2 ft. 9 in.

Young trees have also been planted in the Arboretum.

Introduced in 1851 by Wm. Lobb.

TORREYA NUCIFERA Siebold and Zuccarini. Japan.

Loudon, iv. 2100 (1838) (as *Podocarpus nucifera*); Clinton-Baker, iii. 62 (1913); Elwes and Henry, vi. 1463 (1912); Bean, ii. 598 (1914); Wilson, Conifers of Japan, 9 (1916); Dallimore and Jackson, 75 (1923).

ARBORETUM. Young plants in the Down Cover.

Introduced, according to Aiton, in 1764.

TSUGA ALBERTIANA Sénéclauze. Western Hemlock. (Family Pinaceae.) West coast of North America.

Sargent, Silva, xii. 73, t. 605 (1898) (as *T. heterophylla*); Elwes and Henry, ii. 234 (1907); Bean, ii. 604 (1914); Dallimore and Jackson, 524 (1923).

This handsome conifer is represented at Westonbirt by many fine and well-furnished specimens.

Arboretum. The tallest we have measured are two trees in the Down Cover (Nos. 1021 and 1026); one is 85 ft. by 7 ft. 5 in., and the other about the same height and 6 ft. in girth. No. 871 is a beautiful tree in the Specimen Avenue, 76 ft. by 5 ft. 8 in. (Plate 56). Another fine tree (No. 916) in the Main Drive is 80 ft. high. There are other good trees in the Main Drive.

Silkwood. Two good trees about 70 ft. high on either side of the Willesley Drive (No. 1130).

Introduced in 1851 by Jeffrey.

TSUGA BRUNONIANA Carrière. Himalayas.

Loudon, iv. 2325 (1838); Elwes and Henry, ii. 244 (1907); Clinton-Baker, i. 63 (1909); Bean, ii. 604 (1914); Dallimore and Jackson, 528 (1923).

Arboretum. Two young trees planted in the Middle Ride in 1923 are making good growth.

Introduced in 1838.

TSUGA CANADENSIS Carrière. Eastern Hemlock. Eastern North America.

Loudon, iv. 2322 (1838) (as *Abies canadensis*); Sargent, Silva, xii. 63, t. 603 (1898); Elwes and Henry, ii. 239 (1907); Clinton-Baker, i. 64 (1909); Bean, ii. 605 (1914); Dallimore and Jackson, 530 (1923).

Arboretum. Numerous specimens, the tallest being probably the one (No. 1020) at the entrance to Down Cover. This is 60 ft. by 5 ft. 10 in. Another (No. 828) in Acer Grove is 50 ft. 6 in. by 4 ft. 4 in. No. 852, in Specimen Avenue, is about 40 ft. high.

Var. *macrophylla* Hort.

Arboretum. An old specimen in 'Texas'.

Var. *pendula* Parsons.

Pleasure Grounds. No. 1151, on the Rockery.

Introduced by Peter Collinson about 1736.

TSUGA ALBERTIANA

In Specimen Avenue

TSUGA PATTONIANA

In Specimen Avenue

TSUGA CAROLINIANA Engelmann. Southern Alleghany Mts.

Sargent, Silva, xii. 69, t. 604 (1898); Elwes and Henry, ii. 243 (1907); Clinton-Baker, i. 65 (1909); Dallimore and Jackson, 531 (1923).

ARBORETUM. Young plant in Down Cover.
Introduced in 1886.

TSUGA DIVERSIFOLIA Masters. Japan.

Elwes and Henry, ii. 247 (1907); Clinton-Baker, i. 66 (1909); Bean, ii. 607 (1914); Dallimore and Jackson, 534 (1923).

ARBORETUM. Young plant in Rattray's Nursery.
Introduced by J. G. Veitch in 1861.

TSUGA JEFFREYI Henry. British Columbia.

Elwes and Henry, ii. 231 (1907) (as *T. Pattoniana* var. *Jeffreyi*); Dallimore and Jackson, 535 (1923).

SILKWOOD. No. 1072, in the Willesley Drive, an old specimen which, though only 15 ft. high by 11 in. in girth, must be at least forty years old.

This hemlock appears to be intermediate in character between *T. Albertiana* and *T. Pattoniana*, and the latest view is that it is a hybrid between these species. Specimens exist in several of the older pineta, and they all agree in their slowness of growth and absence of cones.

Apparently introduced by Jeffrey in 1851.

TSUGA PATTONIANA Sénéclauze. (*T. Hookeriana* Carrière.)
Western North America from Alaska to California.

Sargent, Silva, xii. 77, t. 606 (1896) (as *T. Mertensiana*); Elwes and Henry, ii. 229 (1907); Clinton-Baker, i. 67 (1909); Bean, ii. 607 (1914); Dallimore and Jackson, 536 (1923).

ARBORETUM. Several well-grown specimens.

A tree, No. 849 in Specimen Avenue (Plate 57), measuring 42 ft. by 3 ft. 2 in.

SILKWOOD. No. 1061, in the Broad Drive, measuring 30 ft. by 3 ft. Willesley Drive, three or four good specimens, one (No. 1138) measuring 32 ft. by 2 ft. 5 in.

Introduced in 1854.

ULMUS CAMPESTRIS Linnaeus. English Elm.

Loudon, iii. 1374 (1838) (in part); Ley, in Journal of Botany, 1910, p. 72 (as *U. surculosa*); Moss, in Gard. Chron., March 30, 1912, p. 199; Elwes and Henry, vii. 1903 (1913); Bean, ii. 612 (1914).

The finest elms at Westonbirt appear to be two trees standing together on the Downs at the end of the Straight Drive (Plate 58). The tallest of these we make to be 118 ft. by 15 ft. 11 in., and is the largest tree, height and girth combined, of any on the estate. The other measures 111 ft. by 16 ft. 3 in.

Pleasure Grounds. No. 1217, near the house, is a tree over 100 ft. high with a trunk 12 ft. 4 in. in girth (Plate 59). Four elms standing on the New Ground were brought from Charlton, four miles away, in 1885, when trees of 60 ft. in height. Only two of these now remain, the tallest being 87 ft. by 7 ft. 9 in. in girth, and the other 79 ft. by 8 ft.

ULMUS GLABRA Miller. Smooth-leaved Elm. Europe, Western Asia.

Loudon, iii. 1403 (1838); Ley, in Journ. Bot., 1910, p. 69; Moss, in Gard. Chron., April 6, 1912, p. 217; Elwes and Henry, vii. 1887 (1913); Bean, ii. 618 (1914).

Park. The finest tree of this species stands in a plantation near the farm, its dimensions being about 90 ft. by 13 ft. 3 in. It has the vase-like habit of *U. americana*,[1] to which species it was at first erroneously referred by the writer. After seeing the flowers in the spring of 1922, however, he had no difficulty in identifying it with *U. glabra*. No. 1471, in the Park by the Sherborne. Three good trees of characteristic shape near the Orchid Houses, one (Plate 60) measuring 80 ft. by 11 ft. 9 in.

There are also two fine trees on a bank opposite the village school.

The Downs. A small tree (No. 737) appears to be a form of this species.

Silkwood. Trees of moderate size in the Broad Drive and Willesley Drive.

This tree is found wild in the southern, midland, and eastern counties. It is very variable in size and shape of leaf.

[1] Elwes (loc. cit., p. 1859) records a small tree of the American elm from Silkwood, but a careful search has failed to reveal its whereabouts.

ENGLISH ELMS

Near Down Gate

ENGLISH ELM

In Pleasure Grounds

ULMUS GLABRA

Near Garden Plantation

GOODYER'S ELM

In Park

Var. *Webbiana* Lee.

In a clump near the entrance to the Kitchen Garden is a very fine specimen of this distinct variety, measuring 80 ft. by 9 ft. 8 in. (No. 1463).

Var. *Wheatleyi* Simon Louis. Wheatley or Jersey Elm.

PARK. No. 1440 a, near the Drive, of markedly pyramidal habit, measuring 57 ft. by 4 ft. 8 in. No. 1462.

ULMUS MAJOR Smith. Dutch Elm. Europe.

Loudon, iii. 1396 (1838); Ley, in Journ. Bot., 1910, p. 71; Moss, in Gard. Chron., April 6, 1912, p. 217 (as *U. hollandica*); Elwes and Henry, vii. 1883 (1913); Bean, ii. 615 (1914).

PARK. Near the Old Lodge Clump is a tree (No. 1439 a) which is 75 ft. by 8 ft. 2 in. Another and larger tree (No. 1449) in the clump by the farm is about 90 ft. high by 9 ft. 2 in. In the meadow below the Pleasure Grounds there are several over 80 ft., one being 95 ft. by 11 ft. in girth. Another fine specimen stands on the right-hand side of the drive to Pickard's lodge.

This elm, which is widely spread in Britain, is very distinct in habit.

ULMUS MINOR Reichenbach. Goodyer's Elm. Europe, including Britain (eastern and midland counties).

Ley, in Journ. Bot., 1910, p. 70 (as *U. glabra* var. *minor*); Moss, in Gard. Chron., April 6, 1912, p. 216 (as *U. sativa*); Elwes and Henry, vii. 1901 (1913).

PARK. The large tree (No. 1470) in the Park between the Garden and Pickard's lodge (Plate 61) was stated by Elwes to be the largest known elm of its kind in Britain. According to his measurements in 1912 it was 97 ft. high and 7 ft. in girth, but in 1921 we could not make it more than 88 ft. high by 8 ft. 1 in. in girth.

There is another tree (No. 432 a) in a plantation near the Rectory, which is over 80 ft. high by 6 ft. 8 in. in girth.

Goodyer's elm is a very graceful tree, especially in winter, when the delicate tracery of the slender twigs is very noticeable. It was known to the early botanists, being described by Goodyer as long ago as 1633, but has apparently escaped the notice of later writers until

quite recently, when it has been variously described as *Ulmus sativa*, *U. sativa* var. *Lockii*, and *U. Plotii*.

ULMUS MONTANA Stokes. Wych Elm. Europe, Asia Minor, Caucasus, Amurland, Manchuria, Japan.

Loudon, iii. 1398 (1838); Ley, in Journ. Bot., 1910, p. 68 (as *U. scabra*); Moss, in Gard. Chron., April 6, 1912, p. 217; Elwes and Henry, vii. 1866 (1913); Bean, ii. 616 (1914).

Park. Several fine-spreading trees, one opposite the house measuring 72 ft. high by 11 ft. 7 in. Another in a plantation by the laundry measures 95 ft. by 16 ft. 8 in.

Var. *pendula Camperdowni* Henry. Camperdown Elm.

Pleasure Grounds. No. 1379, near New Ground.

Silkwood. No. 444, in the Elm collection. No. 656, in the Willesley Drive.

ULMUS SMITHII Henry. Downton Elm. Hybrid origin.

Loudon, iii. 1405 (1838) (as *U. glabra* var. *pendula*); Elwes and Henry, vii. 1868 (1913).

Arboretum. No. 52, at end of Straight Drive near the Down Gate, is a tree 60 ft. high by 4 ft. 11 in. in girth.

This elm was first raised in Smith's nursery at Worcester from seeds obtained from a tree in Nottinghamshire.

ULMUS VEGETA Ley. Huntingdon Elm. ? Hybrid origin.

Loudon, iii. 1404 (1838) (as *U. glabra* var. *vegeta*); Ley, in Journ. Bot., 1910, p. 68; Moss, in Gard. Chron., April 13, 1912, p. 235; Elwes and Henry, vii. 1879 (1913).

Arboretum. A tree (No. 279) in the Broad Avenue, about thirty years planted, is 67 ft. by 4 ft.

Park. No. 1450, opposite the house in the cricket field, a well-placed tree 95 ft. by 11 ft. 2 in.

Pleasure Grounds. A very fine and well-shaped tree (No. 399) below the Terrace, measuring 100 ft. high by 12 ft. in girth (Plates 62 and 63).

Silkwood and Downs. Several fine trees.

Several very tall trees on the bank opposite the village school. These are difficult to measure accurately on account of their position,

HUNTINGDON ELM

In Pleasure Grounds. (Winter)

HUNTINGDON ELM

In Pleasure Grounds. (*Summer*)

but the largest appears to be over 100 ft. high and has a bole 17 ft. 5 in. in girth at 5 ft. from the ground.

The Huntingdon elm, a presumed hybrid between *U. glabra* and *U. montana*, grows very rapidly, and has attained a larger size than any other deciduous tree in Great Britain.

ULMUS VIMINALIS Loddiges. Origin uncertain.

Loudon, iii. 1376 (1838); Elwes and Henry, vii. 1906 (1913) (as *U. campestris* var. *viminalis*).

Silkwood. No. 628, in the Willesley Drive, a tree 48 ft. 6 in. by 2 ft. 8 in.

This elm, which is very distinct in foliage, is stated by Loudon to have been raised by Masters in 1817 from seeds of the common English elm.

VACCINIUM PADIFOLIUM Smith. (Family Vacciniaceae.) Mountains of Madeira.

Bot. Mag., t. 7305 (1893); Bean, ii. 628 (1914).

Kitchen Garden Nursery.

VERONICA CUPRESSOIDES Hooker. (Family Scrophulariaceae.) New Zealand.

Bot. Mag., t. 7348 (1894).

Orchid Nursery.

VIBURNUM BITCHUIENSE Makai. (Family Caprifoliaceae.) Western Japan.

Gard. Chron., May 21, 1921, p. 247, fig. 108.

Pleasure Grounds.

Resembling *V. Carlesii*, with which it was formerly confused, but is a more widely branched, taller-growing bush, with smaller flower clusters, the flowers being less fragrant.

VIBURNUM BUDDLEIFOLIUM C. M. Wright. Central China.

Bean, ii. 643 (1914).

Arboretum.

Introduced in 1900.

VIBURNUM CARLESII Hemsley. Corea.

Bot. Mag., t. 8114 (1907); Bean, ii. 644 (1914).

Pleasure Grounds. One of the most attractive of the more recent introductions on account of the beauty and fragrance of its flowers.

Introduced in 1902.

VIBURNUM CASSINOIDES Linnaeus. Eastern North America.

Bean, ii. 645 (1914).

Orchid Nursery.

VIBURNUM CORIACEUM Blume. Himalaya and China.

Sargent, Trees and Shrubs, t. 143; Bean, ii. 645 (1914).

In the walk under high road archway, a fine plant 16 ft. high.

Arboretum. A plant in Middle Ride, moved from the Nursery in 1923 when 12 ft. high.

Introduced in 1881.

VIBURNUM DASYANTHUM Rehder. (Family Caprifoliaceae.) West China.

Bean, ii. 646 (1914).

Arboretum. No. 263 in the Main Drive.

Introduced in 1907.

VIBURNUM DAVIDI Franchet. West China.

Bot. Mag., t. 8980 (1923); Bean, ii. 646 (1924).

Pleasure Grounds. Rockery.

Introduced by Wilson in 1904.

VIBURNUM DILATATUM Thunberg. China, Japan.

Bot. Mag., t. 6215 (1876); Bean, ii. 647 (1914).

Orchid Nursery.

Introduced before 1875.

VIBURNUM FRAGRANS Bunge. China.

Gard. Chron., Feb. 26, 1921, p. 107, and March 5, 1921, p. 111, fig. 48.

Arboretum. Pool Avenue, south side, planted in 1922.

THE SUNKEN GARDEN

VIBURNUM HARRYANUM Rehder. West China.

Bean, ii. 648 (1914).

Young plants in the Kitchen Garden Nursery.

Introduced in 1904 and named after Sir Harry Veitch.

VIBURNUM HENRYI Hemsley. Central China.

Bot. Mag., t. 8393 (1911); Bean, ii. 649 (1914).

Pleasure Grounds.

Introduced by Wilson in 1901.

VIBURNUM LANTANA Linnaeus. Wayfaring Tree. Europe (including South England).

Bean, ii. 651 (1914).

Arboretum. Nos. 198 and 246, in the Main Drive.

VIBURNUM LENTAGO Linnaeus. Sheepberry. Eastern North America.

Bean, ii. 651 (1914).

Arboretum. Victory Glade. Plants moved from the Orchid Nursery in 1922. Middle Ride, planted about 1924.

Introduced in 1761.

VIBURNUM LOBOPHYLLUM Graebner. West China.

Bean, ii. 652 (1914).

Young plants in the Orchid Nursery, raised from seed received from Kew.

Introduced by Wilson in 1901.

VIBURNUM NUDUM Linnaeus. Eastern North America.

Bean, ii. 653 (1914).

Arboretum. Down Cover: old plant.

Pleasure Grounds. An old specimen (No. 1288) near the village end, about 12 ft. in height.

Introduced in 1752.

VIBURNUM PROPINQUUM Hemsley. Central and West China.

Bean, ii. 654 (1914).

Orchid Nursery.

Introduced by Wilson for Messrs. Veitch in 1911.

VIBURNUM PRUNIFOLIUM Linnaeus. Black Haw. Eastern North America.

Bean, ii. 654 (1914).

Arboretum. Victory Glade, planted out 1903.

Introduced in 1731.

VIBURNUM RHYTIDOPHYLLUM Hemsley. Central and West China.

Bot. Mag., t. 8382 (1911); Bean, ii. 655 (1914).

Frequent.

A specimen in the Old Nursery, planted about 1910, was 11 ft. high in 1920. In the walk under the high road archway it is 16 ft. high.

One of the most striking of the recent introductions from China when in fruit, though the flowers are somewhat disappointing.

Introduced by Wilson in 1900.

VIBURNUM SARGENTI Koehne. North China.

Bean, ii. 654 (1914).

Orchid Nursery.

Introduced to Europe in 1892.

VIBURNUM SIEBOLDI Miquel. Japan.

Bean, ii. 656 (1914).

Silkwood. No. 670, an old plant in the Willesley Drive, long cultivated under the name of *V. reticulatum*.

VIBURNUM THEIFERUM Rehder. Central and West China.

Bean, ii. 657 (1914).

Pleasure Grounds. No. 1293, at the village end, planted in 1911.

Introduced in 1901 by Wilson.

WINTER SCENE IN PLEASURE GROUNDS

VIBURNUM TOMENTOSUM Thunberg. China and Japan.

Bean, ii. 658 (1914).

Var. *Mariesi* Veitch.

ARBORETUM. No. 145 a, in the Main Drive. No. 238, Clay Island.
PLEASURE GROUNDS. No. 1423, on terrace near Sunken Garden.

Var. *plicatum* Maximowicz. Japanese Snowball.

PLEASURE GROUNDS. In several places.

This is one of the most ornamental of our deciduous shrubs.

VIBURNUM UTILE Hemsley. China.

Bot. Mag., t. 8174 (1908); Bean, ii. 659 (1914).

PLEASURE GROUNDS. No. 1366 a, in bed near New Ground. Another plant near the village end.

Introduced in 1901.

VIBURNUM VENOSUM Britton. Eastern United States.

Bean, ii. 660 (1914).

Old Nursery.

Var. *Canbyi* Rehder.

PLEASURE GROUNDS. No. 1231, near the Pergola. No. 1334, near the old Wellingtonia.

VIBURNUM VEITCHII C. H. Wright. Central China.

Bean, ii. 659 (1914).

ARBORETUM. Victory Glade; moved from Orchid Nursery in 1922.

Introduced in 1906.

VITIS COIGNETIAE Pulliat. Japan.

Bean, ii. 669 (1914).

ARBORETUM. No. 118, in the Main Drive.

KITCHEN GARDEN. Two plants trained up the trunk of Scots pine.

The immense size of the leaves and the beauty of their autumn colouring make this the finest of all vines.

VITIS HENRYANA Hemsley. Central China.

Bean, ii. 670 (1914).

ARBORETUM. Plant houses.

VITIS LABRUSCA Linnaeus. Eastern North America.

Bean, ii. 672 (1914).

Orchid Nursery.
Introduced in 1656.

VITIS MEGALOPHYLLA Veitch. West China.

Bot. Mag., t. 8537 (1914) (as *Ampelopsis megalophylla*); Bean, ii. 673 (1914).

PLEASURE GROUNDS.

Introduced by Wilson in 1900. One of the most striking of the hardy vines, the leaves being larger than any other *Vitis* grown in English gardens.

ZANTHORHIZA APIIFOLIA L'Héritier. Yellow Root. (Family RANUNCULACEAE.) Eastern United States.

Bot. Mag., t. 1736 (1815); Bean, ii. 689 (1914).

ARBORETUM. No. 304, in Pool Avenue.
Introduced about 1776.

ZELKOVA ACUMINATA Planchon. Keaki. (Family ULMACEAE.) China, Corea, Japan.

Elwes and Henry, iv. 920 (1909); Bean, ii. 693 (1914).

SILKWOOD. No. 658, in the Willesley Drive.
Old Nursery.
Introduced by J. G. Veitch in 1862.

ZELKOVA CRENATA Spach. Caucasus, North Persia.

Loudon, iii. 1409 (1838); Elwes and Henry, iv. 915 (1909); Bean, ii. 694 (1914).

ARBORETUM. No. 278, in Middle Ride, a tree moved from the Nursery in 1920 when 20 ft. high by 1 ft. 8 in. and thirty years old.

SILKWOOD. A small tree (No. 559) in the Willesley Drive.
Introduced in 1760.

VIEW OF HOUSE FROM LAKE

Showing Cut-Leaved Walnut reflected in the Water

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